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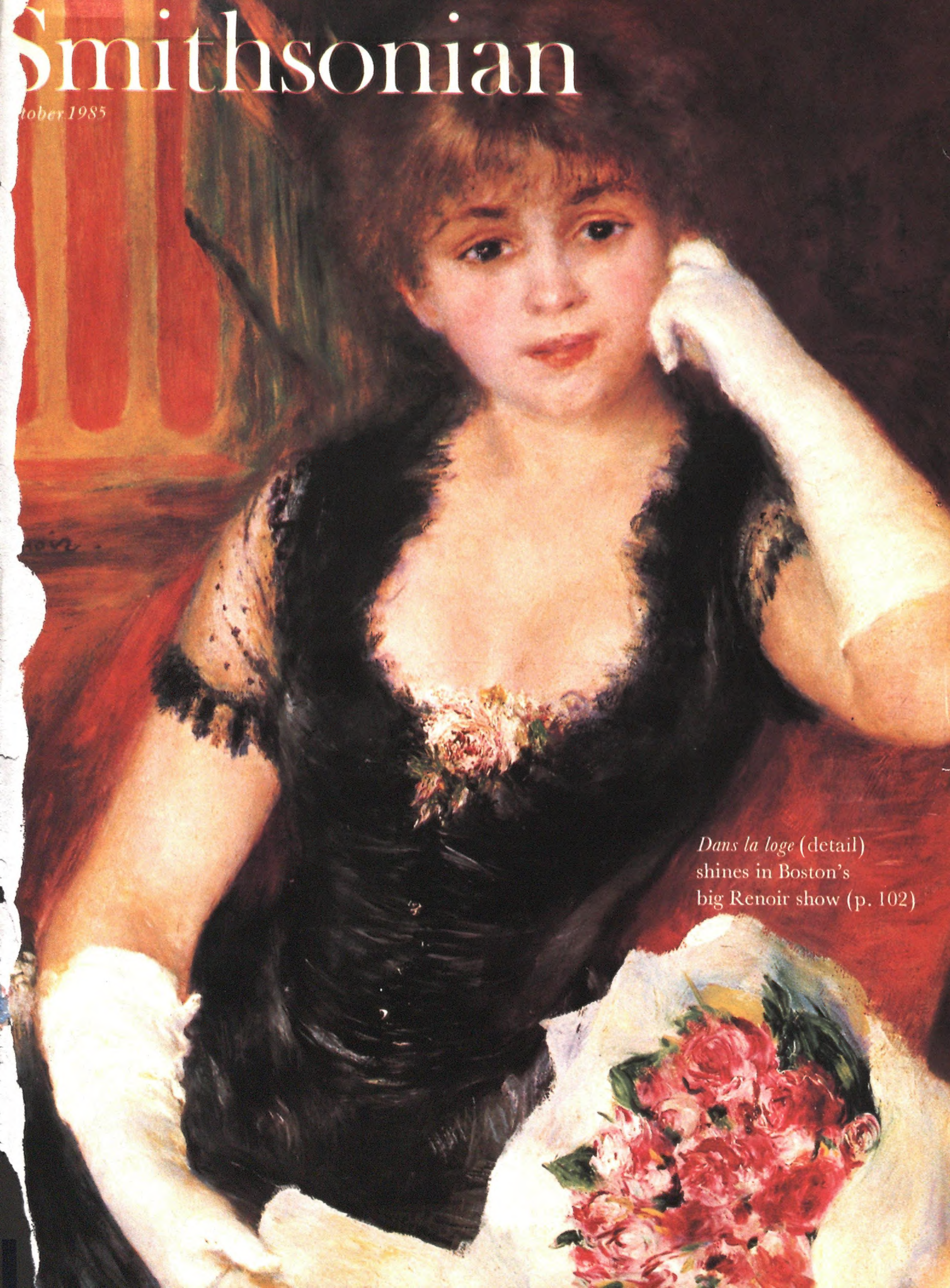

Dans la loge (detail)
shines in Boston's
big Renoir show (p. 102)

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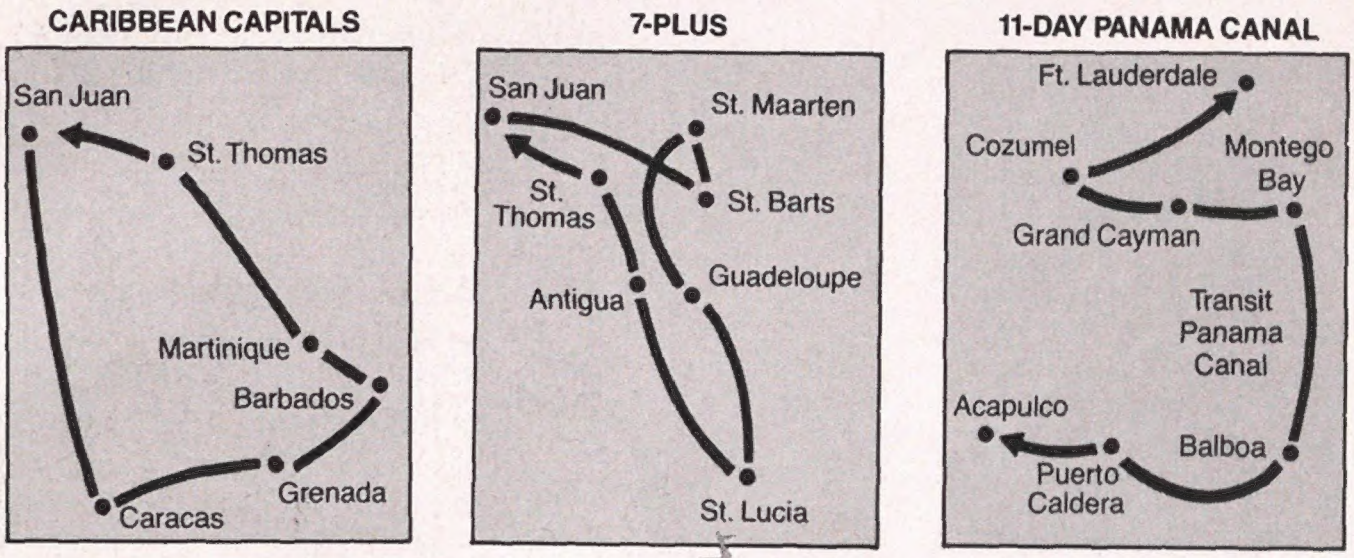

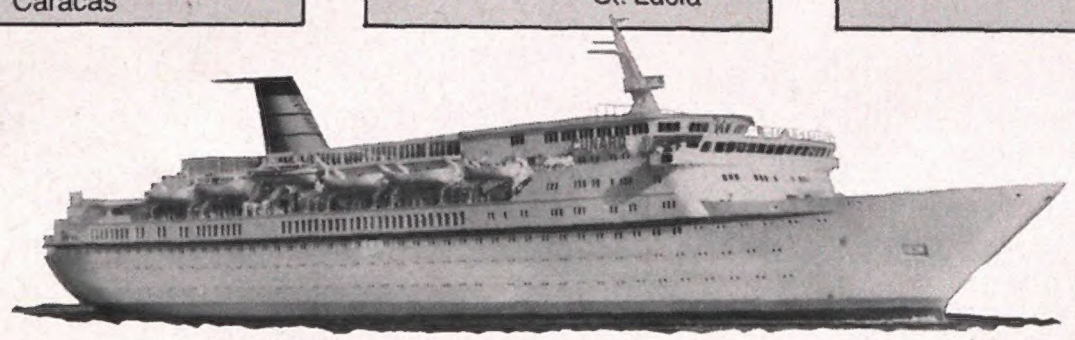

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October 1985

Smithsonian

Volume 16, Number 7

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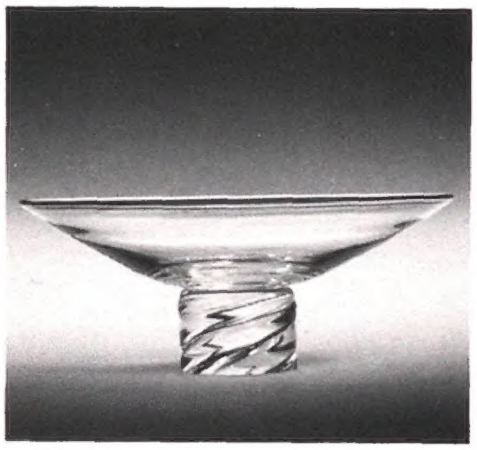

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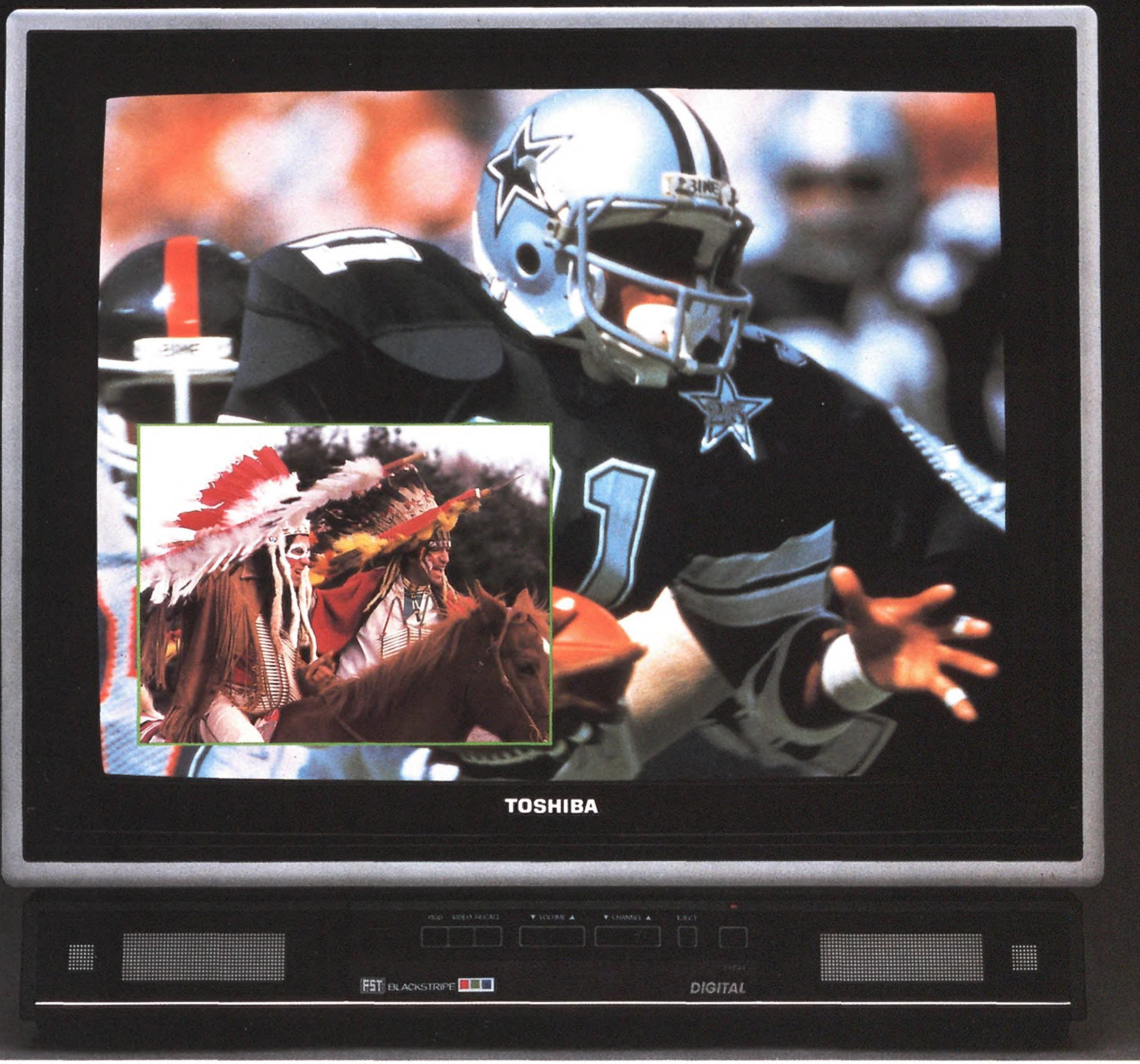

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Smithsonian horizons

What is left of our frontier tradition may be found in the isolation and silence of the West's mountain slopes

There is a reverence about "high country" on Colorado's Western Slope that only those who know it can understand. Tundra vegetation, astonishingly delicate in color and blossom, fingers its way down to elk-wallows around alpine lakes at timberline, and up to tumbled rocks and snow couloirs that spew outward below great, ragged ridgelines. There may be thunderheads on the horizon and angry spates of weather that drive one into the shelter of a parka and the lee of the last stunted outposts of fir or bristlecone pine. But more commonly the dominating arc of the sky has a blue crystalline clarity that bathes each distant feature in a light that invites almost infinite imaginings of detail. Apart from the yip of marmot, calling to a friend across the canyon, or the murmur of running snowmelt beneath the scree slope underfoot, there is only an immense, enveloping solitude.

We hiked up Granite Creek in August, the slopes above still laced with snow. It is perhaps the least visited of the fan of tributaries that tumble down off the spurs of the Continental Divide into the Upper Fryingpan River (itself a tributary of the Roaring Fork, and that of the Colorado). As we climbed, switchbacking past softening scars left by winter avalanches, the scattered traces of contemporary America receded.

Whether seen close at hand or with the sense of detachment that the Smithsonian invites, the scale and relative emptiness of the western United States are still among our greatest glories. They breed a respect for silences and a form of self-reliance, both carrying more than their share of what survives of our frontier tradition. It is also part of that tradition for neighbors to need—and help—neighbors in coping with a wilderness that is never very far away. On the Lower Fryingpan earlier in the summer, we had fretted together about a marauding black bear with a taste for what could be scavenged from far-separated cabins.

Yet stunningly beautiful as the setting is, life there can be narrowing or isolating as well as physically demanding. The limited economic and social opportunities available induce many young people growing up in the region today to seek their fortunes on our newer urban frontiers instead.

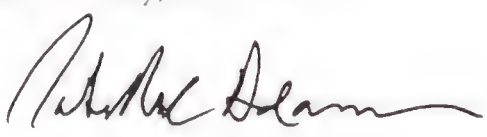
Where can we find an intellectual and moral compass with which to navigate from modern, urban America into this serene but unforgiving countryside and back again? Not adequately in mere nostalgia. There is nothing wrong with romantic, lovingly preserved vestiges of our past history, but it diminishes the meaning of wilderness to preserve it only as a relic.

There are of course other, more enduring roles for wilderness. They include providing a permanent refuge for endangered species, or a temporary one for vacationing overstressed urbanites. But, at least equally important, there remains a personal inner space that can best be explored in comparative isolation and silence.

On the Upper Fryingpan, or on the many tens of thousands of square miles of its equivalents elsewhere, we can be induced to probe for essentials by stripping away rather than endlessly complicating or adding. And with the rediscovery of enduring forms of order and proportion within ourselves, there is also the opportunity to work out a more creative union of past and present—one that begins with neither mythicizing the past nor erasing memory.

I was oddly reminded, contemplating the dark and glistening walls of the great amphitheater at the sources of the Granite, of having encountered an expression of the same aspiration or yearning in as harshly emblematic a modern urban setting as one can find. It appeared in a *National Geographic* article on Berlin in January 1982. A graffito could be seen in a photograph of the notorious Wall, its translation roughly as follows:

Live solitary and free, as a tree,
but fraternally, as a forest.



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Letters to the Editor

Visual thinking

Dear Sir: Many of the problems illustrated in your August article were given at László Moholy-Nagy's school, the Institute of Design, in the 1940s. Moholy was one of the leaders in the development of creativity and the Institute was known the world over. We did the paper support for the brick problem with one other limitation: it had to fail with two bricks.
Ray Pearson
Chicago

Dear Sir: I was enthralled with the statement "We'd rather see a spectacular, innovative failure than a tightly developed successful one." Well, a successful failure (read it again, that's what it says) is indeed to be regarded as unexpected. On the other hand, it also suggests that perhaps Mr. Haygood ought to return to reasoning with words, at least until he gets the hang of it.
R. M. Quinn
Tucson

Dear Sir: Your article brings into focus one of the problems associated with our education system.

As a teacher at a medium-sized state university, I see students of average intelligence who have been blinded by schools' testing systems. Filling in missing words or blanks or choosing one answer from five does not allow a student to express or apply his knowledge. Indeed, the system does not teach students how to learn and retain information. The sooner these means of testing are abolished and replaced by applied problems and essays, the quicker our present generation of students will become better engineers and scientists, their imagination and creativity no longer suppressed and their lateral thinking encouraged.
David Ager
Assistant Professor of Chemistry
University of Toledo
Toledo, Ohio

Garment District

Dear Sir: Your caption on page 31 calls Dubrow's Cafeteria, a New York landmark, the "favorite gathering place" for Garment District workers. The *New York Times* of August 3 reported that Dubrow's was closing its doors and selling out to real estate developers. With the District becoming Claibornized, maybe the eating habits of the species will become "MacDonaldized." Hem and chintz on a sesame bun, anyone?
James K. Kelly
East Meadow, New York

Dear Sir: When James Traub said that "Until recently the demand for fashion . . . came almost exclusively from the moneyed class" I started to come unstitched. As an old fashion reporter I remember clearly how, 30 years ago, stores like Ohrbach's and Alexander's sent their buyers to the Paris showings, bought selected styles and rushed them back to New York to take apart, analyze and reproduce at a fraction of the original price, getting them on the market two or three weeks after they first appeared on a Paris runway. Customers were waiting as the doors opened to put down their $69.95 for a copy of a Dior or Chanel.

And when he suggests that Liz Claiborne invented coordinated separates . . . oh, come now!

But, when he ends with a reference to the Garment District's "Polish accent"—that's Yiddish, sir, Yiddish, and if you missed *that*, you've missed the flavor of that particular jungle.
Barbara Ruzinsky
Manhattan Beach, California

Lincoln Highway

Dear Sir: Your article brought back a flood of memories. We lived in Keystone, Iowa, just off the highway 30 miles west of Cedar Rapids. I ate at the Maid Rite Cafe in Belle Plaine many times.

In 1924 my parents, brother and I set out for New York City in a 1923 cloth-top Chevrolet with all our camping equip-

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ment. The first sentence in my trip diary reads: "We left home at 10:30 A.M. and got clean to De Witt where we camped for the night in the school yard." De Witt, 86 miles from Keystone, was where the paving started.

William W. Donnan
Pasadena, California

Dear Sir: The first and only transcontinental convoy of the U.S. Army's Motor Transportation Corps traversed the Lincoln Highway in 1919, starting from Washington on July 7 and arriving in San Francisco 62 days later. Its purpose was to test the feasibility of moving a land army cross-country—rebuilding bridges, fording streams, dragging huge tanks and trucks out of the mud.

Among them were my husband, K. C. Downing, a young lieutenant—and a future U.S. President, Brevet Lt. Col. Dwight D. Eisenhower [below, hands on his hips].

Constance G. Downing
Winter Park, Florida

Dear Sir: The story of the Lincoln Highway made me nostalgic for the early 1900s, when my father would load up the family and luggage for our summer trip to Michigan via the old King's Highway (then called the King of Trails) north out of Texas. He would place his order for a new Model T (later, a Model A) with the local Ford dealer and pick up the car in Flint.

Highway signs made of cardboard were nailed to trees, poles and fences. Sometimes the trail necessitated opening and

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closing pasture gates. We forded streams with no bridges, and often we children had to get out and push while Father steered. When a rainstorm hit, we hastily put up the side curtains. Well do I recall having to be pulled out of a very muddy road in Missouri by a mule team. As we drove on we looked back, to see the wily old farmer emptying buckets of water into the muddy road, awaiting his next customer.

Frances G. Porter
Waco, Texas

Dear Sir: The August issue could not have been more timely. We live near the intersection of Routes 30 and 41, and had just returned from a vacation trip to Washington, driven partly on "old Route 30" in Pennsylvania. What a pleasure: the scenery, the old homes, the curves, grades and tunnels! The interstates cannot compare.

Patricia M. Schwoegler
Dyer, Indiana

Poison ivy

Dear Sir: Although I never bathed in horse urine, I was exposed to a more practical treatment for poison ivy and oak. While working with the Youth Conservation Corps in Virginia, some of the local folks recommended jewelweed be rubbed on the affected area. Sure enough, after an application the itching would stop. The search for jewelweed was a common practice after a hard day's work.

I believe quite a few YCC alumni would vouch for this "cure." Knowing poison ivy relief was within reach was a comforting thought, considering the other usual YCC afflictions of dirt, ticks, blisters, bee stings and splinters.

Joe Nicholas
Cocoa Beach, Florida

Dear Sir: I once had dramatic proof of the efficacy of a very thorough washing with soap and water after exposure to poison oak. Forty-five years ago, two college mates and I hiked up a long and winding trail in Southern California's chaparral-covered hills. We took a trailless route back, straight down a hill. The brush became too dense to push through, so we scrambled over the tops, two feet above the ground, grabbing poison oak for handholds rather than grabbing a forbidding plant with two-inch spines.

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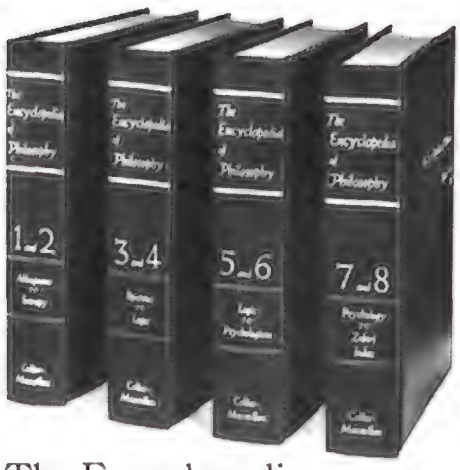

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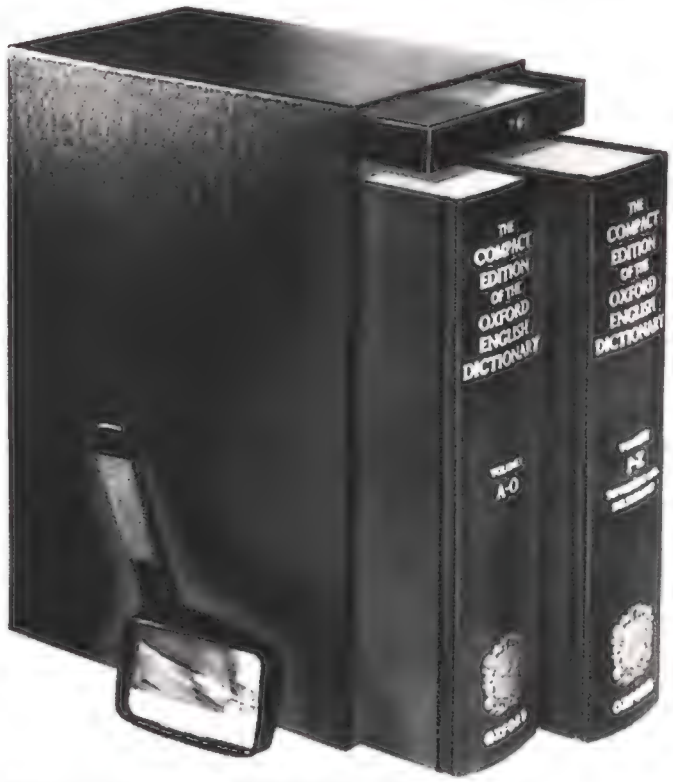

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Back at the cabin, we immediately piled into the shower and sudsed ourselves down from the tops of heads to tips of toes, first in cool water to remove as much oil as possible without spreading it, then in hot water to remove the rest. Everything worn was washed, cleaned with Energine or discarded. We were all allergic to poison oak, but not one got a single itchy patch.
Ruth Woodyard
Berkeley, California
We caution our readers that, while the above lay treatments seem effective in some cases, they have not been tested scientifically. As our article stated, there is at present no known cure for poison ivy that is recommended by the medical profession. Ed.

Dear Sir: During World War II some misguided soul in our federal bureaucracy decided that Sandy Hook, the New Jersey peninsula jutting into New York harbor, would be an excellent landing place for Nazi saboteurs. He also knew that Europeans, not having poison ivy, had not developed an immunity. So he suggested that if poison ivy were planted throughout Sandy Hook, any invaders would soon be incapacitated.

Ten years later it had overrun the area. As the Administrative Officer at Sandy Hook's Fort Hancock, I had fun trying to direct its removal. Never did succeed.
Ward W. Miller, USA (ret.)
Lagrangeville, New York

Dear Sir: The Chinese dermatitis incident you mentioned awakened an old memory of one of the hazards of living in China.

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Milton E. Ballard
Tucson

Phenomena

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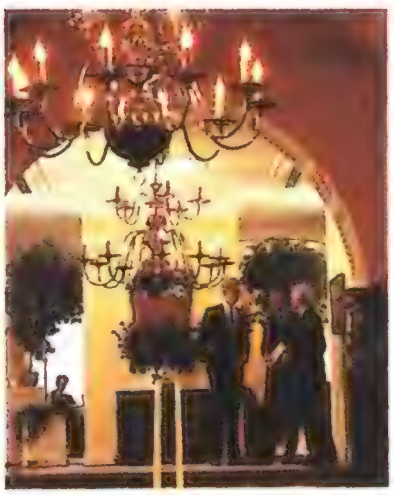

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W. T. Rabe, Archivist
Lake Superior State College
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Dear Sir: Mr. Roddy should know he paid too much for his watch. I got mine free when I bought vitamins, and some service stations here have been giving them away with ten dollars' worth of gas.

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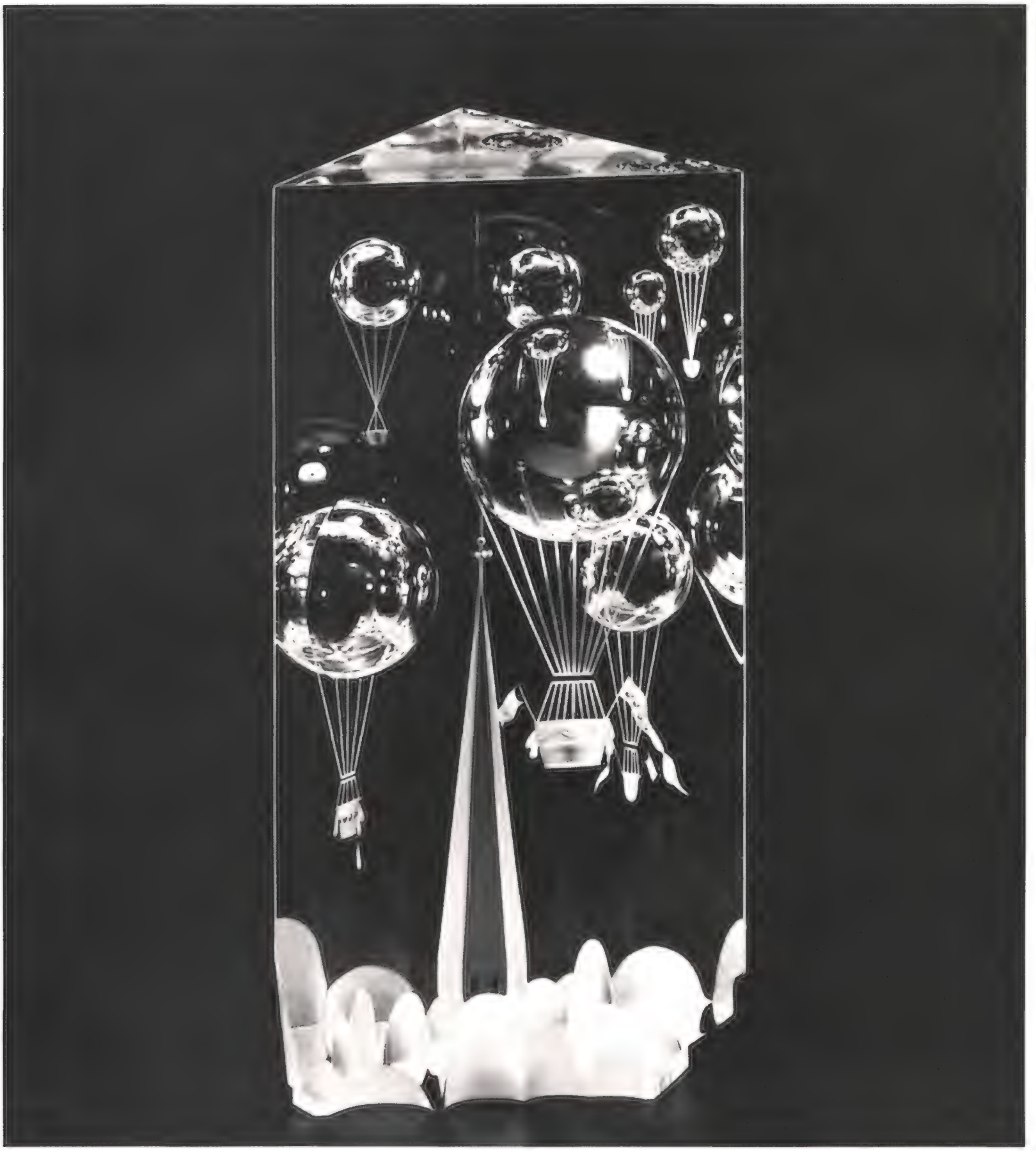
Around the Mall and beyond

This column is being written once in a blue moon. It is the end of July, and the moon is full for the second time this month. Months are based on lunar cycles, but our calendar, like the human beings who use it, has pleasant little imperfections. It constantly makes little mistakes and throws up its hands in despair over fine points of higher mathematics.

And so, to its embarrassment, the calendar occasionally gives birth to two full moons in a month instead of the normal only child, and we blush for its peccadillo and label the second moon "blue" because that seems an unlikely color (tonight's is actually red) and describe unusual events as happening "once in a blue moon." And a lot of us think it's nice that in the Computer Age we still allow such silly, old-fashioned inaccuracies to creep up and remind us of our mortality.

Once in a blue moon you find the Smithsonian doing something as untoward as mixing hardheaded technology with witchcraft. That's exactly what is happening at the end of this month when the Resident Associates will put on a family Halloween party for Associates and Smithsonian staff at, of all places, the National Air and Space Museum.

This is the Smithsonian's second such party, planned as a wholesome alternative to door-to-door foraging for sugary treats. The first, last year, rocked the Museum of Natural History to its venerable foundations, and hoping to improve on that success, organizer Roslyn Beitler, together with Susan Taub, moved this year's event to NASM and worked up a nifty program with the theme "The Sky's the Limit." It's just for you little kids (preschool and early elementary grades)



Balloon Rally

On a solid block of cut and engraved crystal, artist Bernard X. Wolff has launched a traditional small-town balloon rally. Six balloons, weighted with gondolas, seem to multiply infinitely above a New England village. Height 10¼". $11,000. Signed Steuben. Steuben Glass, 717 Fifth Avenue, New York, N.Y. 10022. 1-212-752-1441. (For the Steuben Catalogue, send $5.00.) Steuben is part of Corning Glass Works and has been since 1918.

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Cast of "Monster Madness" will entertain Halloween revelers at Air and Space.

and your parents and friends. Everyone in costume, please. At least a mask.

On the magical night of October 31, the Air and Space Museum's Mall doors will open (creaking eerily, I hope) at 6:30. You will confront a billboard that tells you what to expect. First, you follow a treasure map to various secret treats and trinkets. Then you get some gastronomic support at a refreshment area beside the Air Transportation gallery, where the DC-3 and the Ford Tri-Motor hang from the ceiling.

At 7 P.M. three special shows begin, each in its own gallery. You can go to the little theater at the Golden Age of Flight on the first floor, where a film on aviation in the 1920s and '30s is normally shown. Here Michael Parent will tell a story about wizards while he juggles. Then he'll tell another story about witches, which includes a "singsong sing-along." Or you can go upstairs to the Pioneers of Flight (where the Douglas World Cruiser and the Fokker T-2 and all those are) and watch a show called "Monster Madness" by Bob Brown's Puppets (above), including Baby Face who, like me, never knows whether it's coming or going.

Or you can go to the next-door gallery, Exploring the Planets, and, among the photographs of Mars and all that, listen to Michele Valeri's songs. At last year's Natural History party, says Roslyn,

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Michele pretty nearly made it to the top 40 with her unforgettable "Dinosaur Rock." This year the Dinosaur Lady will probably come up with something about flying: "Pterodactyl Punk," maybe.

Of course, if you play your cards right, you can go to all of the above and get some more goodies from the keeper of the treats who lurks in each area. At 7:45 you'll hear an announcement about photographs being taken of the various categories of costumed kids—flying machines, birds and bats, witches and so on. Presumably these will be displayed later.

You gulp down one last edible treat before you leave the spooky old Air and Space Museum and, burping surreptitiously, ride home with your adult companion. By the time you read this, the Resident Associates newsletter will have furnished further, more precise details.

One of the reasons that the honchos over at Air and Space were interested in throwing this Halloween party was to call attention to Halley's Comet. This astronomical happening, even rarer than the blue moon, will be stirring our juices through much of 1986, so it seems a good idea to inculcate, in the heads of the very young, the thought that there will be something streaking across the big sky that will not be visible again for another 76 years.

Another event that, in America, happens once in a blue moon is a quincentenary. It's so rare I'm not sure of the spelling, but it means a 500th anniversary. It seems that no sooner was our national Bicentennial of 1976 neatly disposed of, than other important historical remembrances were knocking at our door: bicentennials of the Battle of Yorktown; of the Treaty of Paris; of the Signing of the Constitution (1987) and the First Federal Congress and Presidency (1989). The quadricentennial of Raleigh's Lost Colony is already under way in North Carolina. And seven years from this month the big one—the quincentenary of Columbus' voyage of 1492—will be celebrated.

To Europeans, accustomed to millennial observances, a quincentenary is nothing unusual. But in our Western Hemisphere—perhaps not the "New World" that once it was, but certainly not doddering, either—the event is bound to be marked in dozens of ways, from lavish reenactments to a variety of protestations by the Flat Earth Society.

The Smithsonian is already laying plans for its appropriate recognition of the Great Day. I talked to Magali Carrera, recently appointed Coordinator of Planning and Research for the Quincentenary (which at this point assumes a capital initial), and found she has firm and well-founded ideas about our part in it. She warned me instantly to forget about that buzz phrase "the discovery of America."

"America had been settled for thousands of years before any European explorers arrived," she said. "There were developed cultures here that had major cities and elaborate political systems. What happened in 1492 was the first enduring contact between totally different cultures. We're still discovering the intricacies of that cultural mix—what Spanish-Americans call *encuentro*, 'encounter.' That's what we'll be commemorating."

Dr. Carrera, like so many successful people these days, strikes me as far too young for her scholastic background: doc-

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torate in history of art at Columbia University, post-doctoral study at Harvard and the University of North Carolina, an associate professorship at Southeastern Massachusetts University. She's already scheduling colloquia of North American and Latin American scholars in a number of fields, starting next month. They'll present papers and discuss, for the benefit of Smithsonian planners, the salient issues of the Columbus Quincentenary.

"In the United States, for example," said Carrera, "we need to be reminded that the Spanish were in this hemisphere a hundred years before Jamestown." She envisions an interplay that explains the mixture of Spanish and native American attitudes. To the native American, land was not something to be "owned." Aztecs, Mayas and Incas could not understand the Spanish drive to possess it. As for the harshness of that drive, it was, to these indigenous Americans, a familiar ingredient of any social or political upheaval. Cruelty played an inevitable part in every change of ruler, native American as well as European.

"It's too early to say what the exact theme of our Quincentenary program will be," she said. "I hope one will emerge from these discussions."

This fall's meeting at the Smithsonian is by no means the opening gun of the Quincentenary. The National Endowment for the Humanities has been laying plans since 1982, a decade before the event, and in the past few years every Latin American country has joined in.

Still, it's pretty early to come up with definite ideas about what the Institution will do. Carrera looks for some specific plans by next spring. Right now she foresees, beginning in 1991, special exhibits in each museum. "These could be displays of Latin American art at the Hirshhorn," she said, "and archaeology at Natural History. Think of an exhibit on archaeoastronomy at Air and Space!"

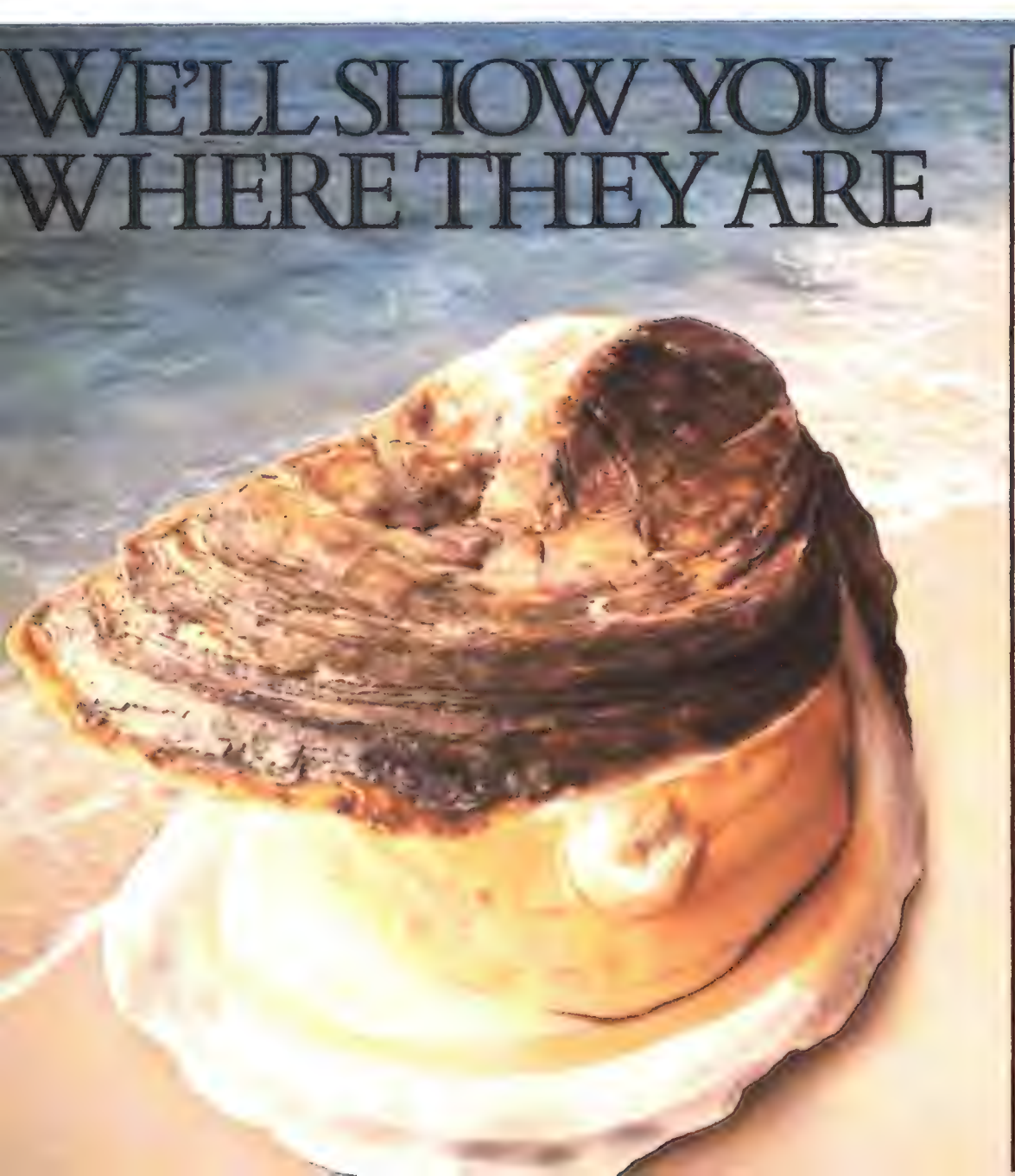
There, or at the Museum of American History, we might find a display explaining Columbus' own navigation. He constantly fudged his fixes, according to Samuel Eliot Morison, in order to show more progress than his ships were making. That way he hoped to keep his crew from worrying themselves into mutiny over being away from home for such a *long* time.

Carrera sees us taking part in broad cultural exchanges between the two Americas. And her own department, the new Directorate of International Activities, which will be housed in the South Quadrangle, will put on its own special exhibits starting in 1987. One, for example, is on tropical forests and will include discussions of their ecology and beauty, and of the need to preserve them.

I got a little worried lest, while the Quincentenary is stimulating all this thoughtful research and dissertation, the element of fun might be forgotten. Magali Carrera reassured me that public programs are of special concern. She looks for a unique Smithsonian Folklife Festival in 1992, "perhaps spotlighting the cultures of the Spanish Southwest." And she is quite certain that all through 1992 the whole country will be thumping with marching bands and sticky with cotton candy. I surely hope so.

The next blue moon, incidentally, occurs in 1988. Watch for it.

Edwards Park



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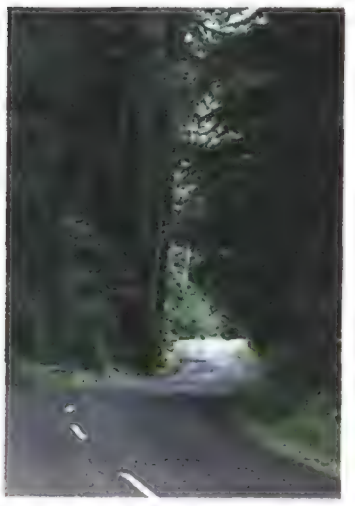

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Phenomena, comment and notes

Might flying fertilizer factories slow dune erosion? Even if not, purple martins are pleasant to have around

Sometimes the hardest advice to follow is: "Don't just do something! Stand there!" By nature, it seems, we humans are interveners. We manage our sanctuaries and preserves for some favorite bird or animal. Rather than putting up signs and leaving the place alone, we send the engineers into wildlife reserves to build miles of dikes and dams and drainage ditches. We want to do it ourselves.

Now and then, however, a voice reminds us that over the long run nature can take care of itself. Brazil has moved to protect some 3.3 million acres of its Atlantic forest. The Serra do Mar complex of ranges, which runs for well over a thousand miles along the coast, has been mostly deforested, partly to make room for sugar and coffee plantations, partly because the lumber there is even more valuable than that in the Amazon, and partly by encroachment from Brazil's largest, most polluted industrialized area.

The government will reforest some of that land, but much will be left alone. Paulo Nogueria Neto, Brazil's special secretary for the environment, plans to let the birds do the work there. "The thrush is the best reforester because he is efficient and free," Nogueria said. "Manmade reforestation is usually homogeneous, but the Atlantic forests are heterogeneous. If we want to repeat the same variety of plant life we should depend on the thrush," he explained.

About a week after I read that in the

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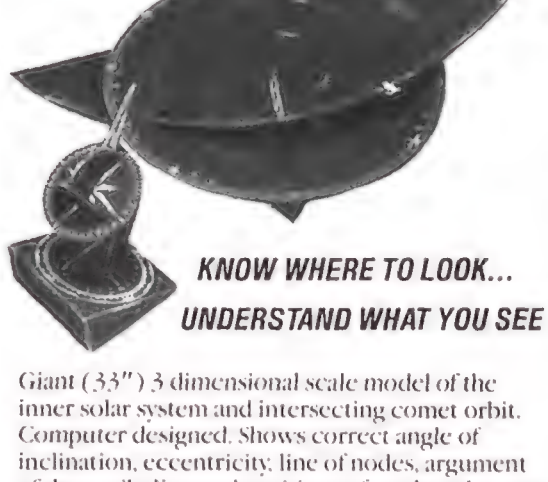

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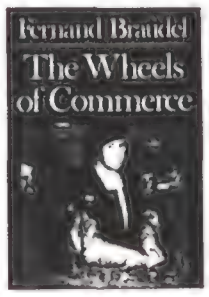

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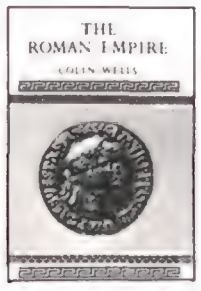

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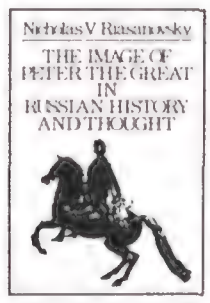

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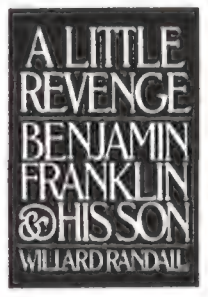

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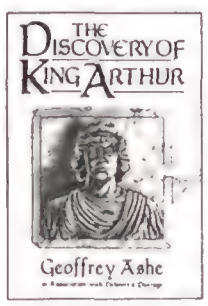

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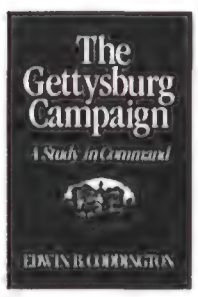

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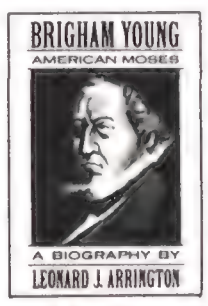

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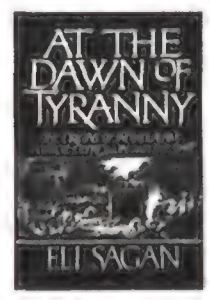

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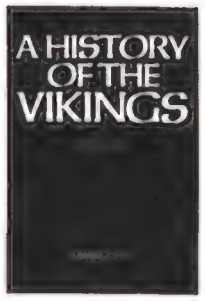

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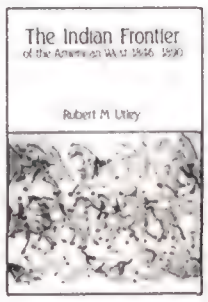

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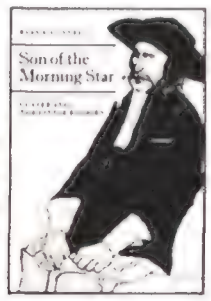

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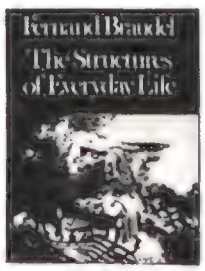

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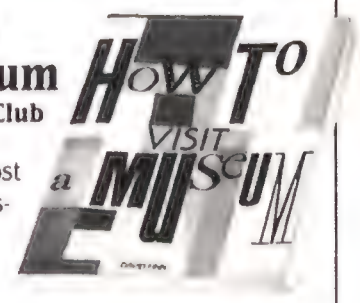

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A female feeds its young in a gourd "birdhouse," first used by the Indians.

New York Times, I came across another scheme to let the birds do the work. This plan involves fertilizing rather than seeding. Coastal beaches and especially barrier islands are subject to erosion, both the steady lateral transport of sand and the explosive change wrought by storms. The dunes behind the beach are the land's first line of defense, ramparts against the sea. The dunes will march with the wind unless vegetation—sea oats and other salt-tolerant species—holds them together with roots.

Dune grasses will seed themselves naturally. Humans also plant them, plugging clumps into bare dunes in the hope they will "take." The trick is to fertilize the plants so they form a thick cover, their roots forming a mat that will hold the sand against wind and storm. And that is where the birds come in.

John Hoke is a resources manager with the National Park Service. (Column readers will recall him as the man who turned some of Washington's architectural pools into minihabitats where ducks now breed: SMITHSONIAN, February 1984.) Ten years ago he visited Pawleys Island in South Carolina, about two decades after Hurricane Hazel had torn most of the vegetation (not to mention most of the houses) away. He was impressed with how lushly the vegetation had come back, and began asking questions. The people there had replanted grasses, it seems, later us-

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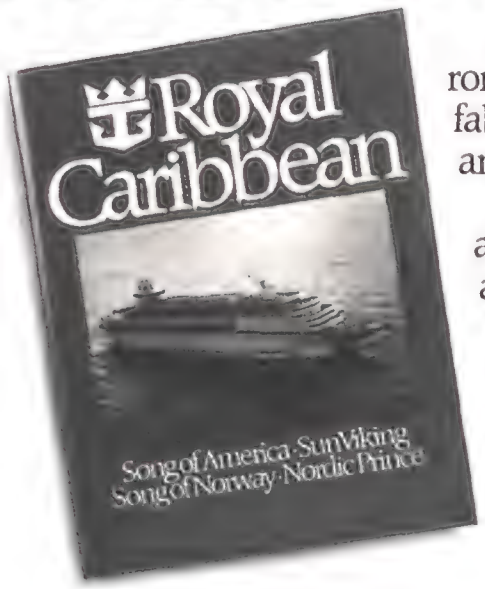

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ing conventional fertilizers to hasten regrowth. Even so, the growth struck Hoke as unusually lush, and he looked further. The difference between Pawleys Island and similar barrier islands, he surmised, comes from the number of birds—especially purple martins—there.

Pawleys Island is lined with purple martin houses, both the apartment houses so common farther north and arrays of gourds hung from yardarms on a pole. The houses have been there for years, and are full season after season. Hoke found the most vigorous growth around the martin houses, both directly under them and within a circle stretching about 40 feet away from each house, which might be the distance parents carry fecal sacs of their young before dropping them.

It is Hoke's hypothesis that the martins provide enough continuing fertilization through their droppings to account for the lush vegetation. He has no numbers, yet, but I have tried some back-of-the-envelope calculations, based purely on assumptions, to arrive at a ball-park figure. Suppose a martin house has 20 boxes or gourds. And suppose that 16 are occupied by martins (the other four having been usurped by sparrows). And suppose that each martin eats half its weight in insects each day, and excretes about half that. A martin weighs about two ounces, so each would produce half an ounce of droppings a day.

Thus our 32 martins are adding one pound of fertilizer a day to the area around their house. If they are there through April, May and June, we are talking about 90 pounds. For July double production with the addition of the young of the year, and we have another 60 pounds. Before this hypothetical colony leaves for South America in August or September, it may have contributed 150 pounds of rich fertilizer. As Nogueria might say, it is efficient and free.

Hoke would like to try attracting martins to other barrier islands, especially places like the Outer Banks of North Carolina, where the government has decided to stop trying to arrest erosion by brute-force engineering efforts (SMITHSONIAN, June 1973). He would like to see the residents there, aided and abetted by bird clubs and Boy Scouts, put up 500 or 1,000 martin houses and compare what happens with control areas in which

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there are no martin houses. It might take some time for martin colonies to establish themselves: the bird list for Pea Island National Wildlife Refuge on the Outer Banks lists the purple martin as an uncommon inhabitant in spring and summer (meaning "present, but not certain to be seen") and does not show it as nesting there at all. Martins are seen there mostly in the fall, during their migration to South America.

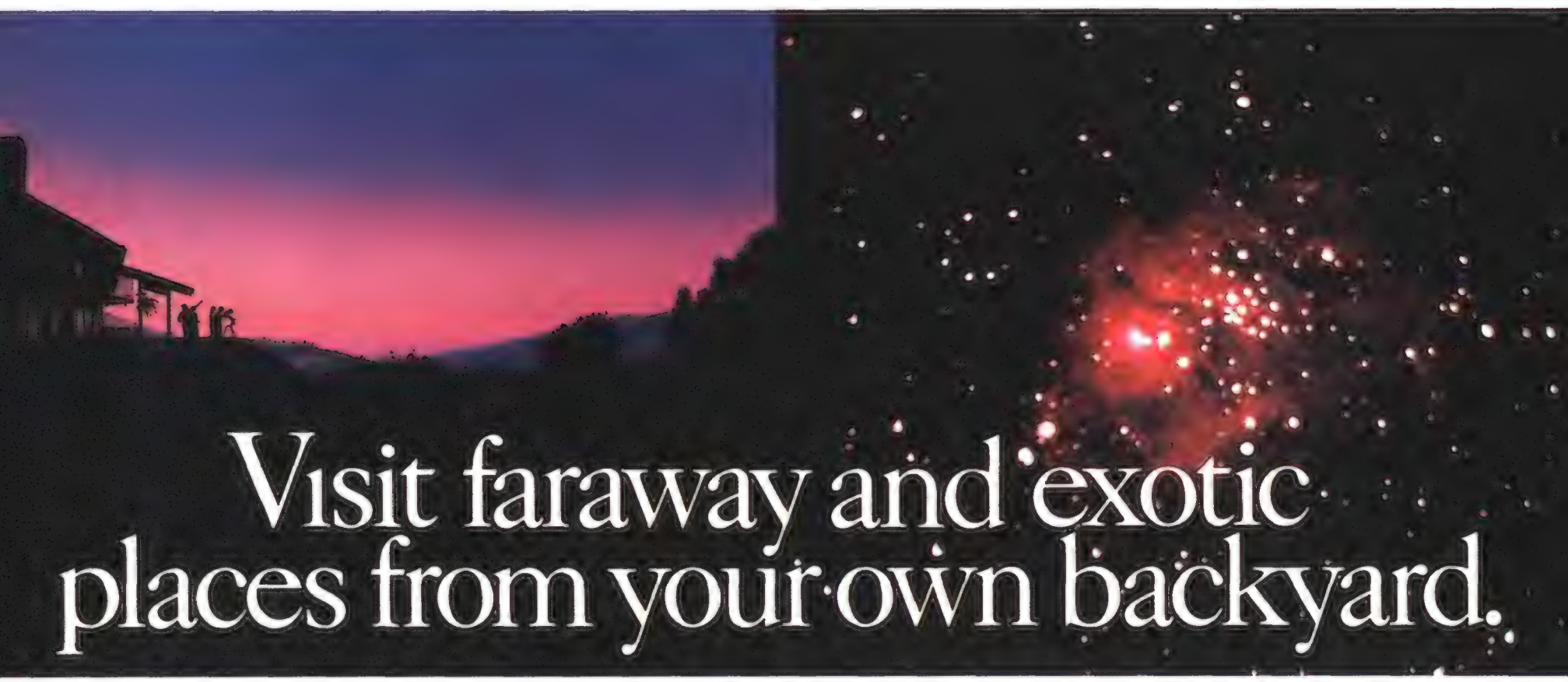
To me, having martins fertilize the dunes is as attractive an idea as having thrushes reseed the coastal forests of Brazil. Once you have put up the martin house, you can lie back in the hammock while the martins turn insects into fertilizer. For me the satisfaction would be like that I get from turning on the lawn sprinkler: no matter how much I goof off for the next couple of hours, I am getting something done.

It is not yet clear that the martins would make any difference to the dunes. More has been claimed for them in the past than they actually deliver. The most famous claim is that a single martin eats 2,000 mosquitoes a day. This turns out to be highly unlikely. Herbert W. Kale II, a Florida Audubon Society ornithologist, looked into the question back in 1968. He found that published analyses of purple martin stomach contents revealed precious few mosquito remains.

More telling, Kale pointed out that the behavior patterns of martins and mosquitoes are so different that martins could not be expected to be major predators of mosquitoes. The birds are most active during the day, while the mosquitoes are most active at twilight and during the night. Their active times overlap only a little before sunrise and after sunset. Additionally, mosquitoes stay closer to the ground, rarely rising above the tree canopy, while martins spend a lot of time 100 to 200 feet above the ground.

Finally, for martins to really put a dent in mosquito populations, Kale argues, they would have to be present in huge numbers (several thousand for each acre of mosquito-producing wetlands) when a hatch of mosquitoes first emerges. The claim is not completely false. Martins do eat some mosquitoes, and one road-killed bird was found to have 250 salt-marsh

Martin arrives with nesting material at a fully occupied apartment complex.



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One 379-apartment house in New Jersey had no fewer than 270 pairs living there.

mosquitoes in its stomach. But they would appear not to be the mosquito scourge we have been led to believe.

Martins do eat insects, and a lot of them. A favorite food is dragonflies. Another is bees. But martins also eat stink bugs, beetles, flies, spiders, grasshoppers, butterflies, moths and bits of eggshells. The last is thought to be ingested because it provides a good source of calcium.

Mosquito killers or not, martins are nice to have around. So, by all means, let's intervene. Not with bulldozers but with birdhouses. Will the purple martins slow the erosion of the barrier islands? Let's find out. Whatever the outcome, we have little to lose. While the birds convert insects into fertilizer, we will vicariously share in the excited hubbub of the martin house, where nonstop chirruping seems to be the continuous communication of breathless news.

Sitting outside after supper, watching the martins make their long glides across the yard to their houses, is not unpleasant. Sometimes they fly in circular patterns with their house at the center, a little like children dancing around the bandstand on the village green. The only drawback to having martins around the house, perhaps, is the sense of loss when the colony leaves long before summer is over. The yard seems unnaturally quiet, like a house when the children are gone.

The martins are down in South America by now, giving the handy among us the time to build (and the rest of us time to buy) the apartment houses or the gourds and the poles we need. Next spring, when their scouts move northward with the wave of emerging insects, they will find—if John Hoke has his way—new places along the coast to nest and hunt and make the world green.

Kale took the high road in his 1968 study. As he ended his paper in *The Auk*, the journal of the American Ornithologists' Union: "The purple martin is one of our most beautiful and friendly birds. It daily consumes a large number of insects. Its aesthetic qualities alone recommend it highly. There is no need to ascribe to the martin abilities greater than those it already possesses in order to encourage its protection and propagation."

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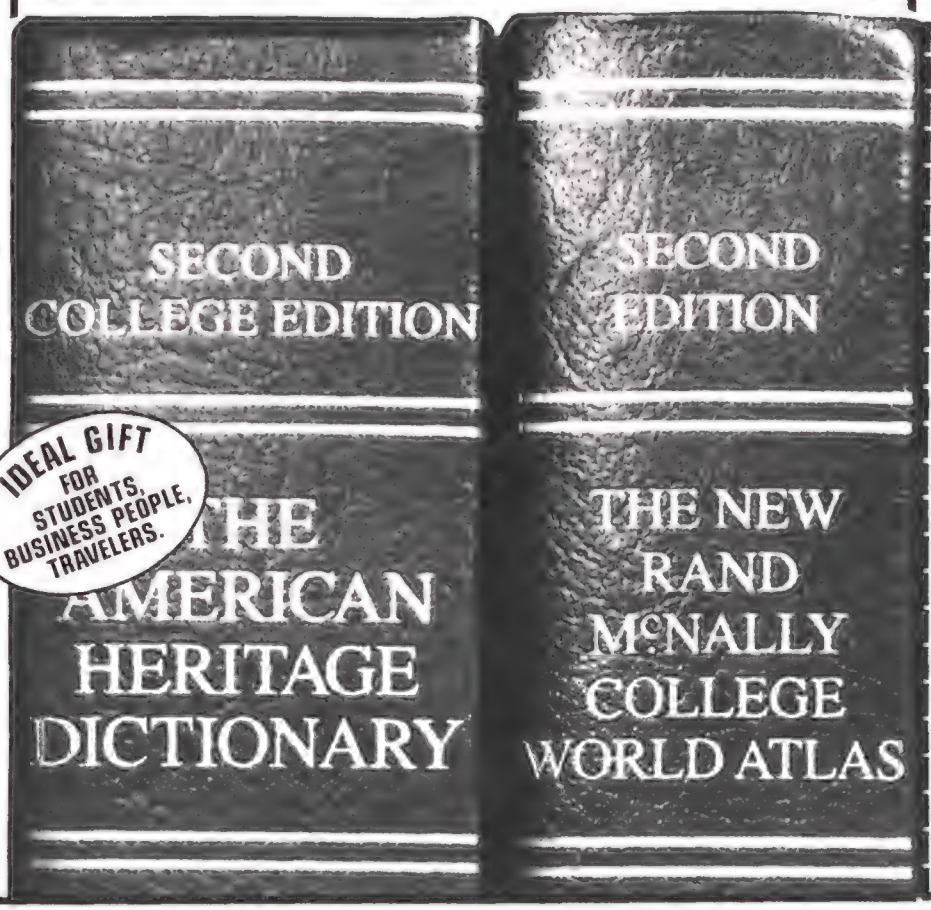

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By Israel Shenker

The great English country house was much more than merely home

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Painted Hall at Chatsworth (opposite), seat of the Dukes of Devonshire, was decorated by artist Louis Laguerre in 1692-94. Above is west front of Hardwick Hall, Elizabethan masterpiece of Robert Smythson.

Britain's aristocrats may enjoy class distinctions, but they have an absolute passion for common clay. Land has traditionally served as the fount of their fortune, a country house as the symbol of their grandeur.

With social position acquired by land purchase, great estates and country houses represented privilege, wealth, influence and power. Beyond that, the country house has been hailed as the greatest collective work of art, England's supreme contribution to the visual arts. Henry James suggested that of all the things the English had invented, "the most perfect, the most characteristic, the only one they have mastered completely in all its details . . . is the well appointed, well administered, well filled country house."

It became a repository of splendid furnishings and stunning art, representing conspicuous consumption, ostentatious display and no small measure of connoisseurship. About 700 of the most spectacular objects

Photographs by James Pipkin

Britain's great country houses

Epitome of a medieval dining and wartime-assembly room is the little-changed great hall of Cotehele.

have been drawn from more than 200 country houses —including those shown on these pages—to make up "The Treasure Houses of Britain: Five Hundred Years of Private Patronage and Art Collecting," on exhibit from November 3 to March 16 at the National Gallery of Art in Washington. Supported by a grant from the Ford Motor Company, it will be the largest and most ambitious single exhibition in the National Gallery's history. In conjunction with the show, public television will air three separate one-hour programs, a week apart, beginning December 16, to tell the story and display the treasures.

From guidebooks, articles, histories and his own extensive memory, Gervase Jackson-Stops, curator of the show, on leave from his job as architectural advisor to Britain's National Trust, compiled a list of 3,000 desirable and representative objects, narrowed it down to a most-wanted list, and spent two years visiting the country houses to see the objects and talk to the owners. "You can't write for these things," he said, "or ask for them by phone. You have to go."

Included are notable paintings by artists such as Rembrandt, Rubens, Poussin, Velázquez, Van Dyck, Reynolds, Constable, Gainsborough and Ruisdael, as well as precious sculpture, armor, ceramics, furni-

Still hanging in Hardwick Hall today, as it did when she was in residence, is portrait of Bess of Hardwick.

The long gallery of Castle Howard dates from 1810. Begun in 1700, house is still lived in by the Howards.

ture, jewelry, silver and tapestries. "The story you're trying to tell is the whole chronology of English taste," Jackson-Stops suggested.

In country houses, the patron of art could exhibit his sovereign taste, wealth and leisure. An estate was a center of influence and of deference to rank and riches, to noble birth and worldly experience. The very ownership of the country house, and the hospitality extended to influential guests, helped arrange convenient marriage as well as government favor, bringing lucrative office and coveted honors. A country house represented permanence, fidelity, tradition; it suggested solid values and defiance of passing turmoil. Fifteen generations of Spencers have lived at Althorp, and the Comptons have been at Compton Wynyates since the 12th century.

The duties of the owner were to preserve and augment his property, leave his heirs the estate intact and debt-free, play a leading role in local if not national affairs and care for the well-being of tenants. It was not vital but merely fashionable to be pretentious and snobbish, to scorn tradesmen and run up debts. Pleasure appeared dutiful, and the country-house owner delivered himself to the joys of hunting, shooting, fishing, dancing, gorging, gambling and dalliance. The 3rd Earl of Aberdeen, the "Wicked Earl," had a wife and could very well keep her and their five children at Haddo House, in Aberdeenshire, while he kept one of his wife's rivals at nearby Ellon Castle, a second at Cairnbulg Castle, a third at Wiscombe Park. His grandson, the 4th Earl, was more interested in affairs of state, and became Prime Minister in 1852. Not till 1868 did Britain have a Prime Minister—Disraeli—who did not come from a landed family.

For those who attained privilege by heritage rather than merit or exertion, great ceremony marked birth, majority, marriage, even death. For the coming of age of the Duke of Rutland, in 1799, a baker baked for 18 days, a brewer brewed for 34 weeks; slaughterers were knee-deep in offal—six oxen, 21 pigs, 23 turkeys, scores of sheep. The high table got the stuffed peacock.

At stately Houghton, in Norfolk, Sir Robert Walpole, an 18th-century Prime Minister, treated his guests to talk of politics, but kept the victuals coming. One guest, Lord Hervey, said they were "up to the chin in beef, venison, geese, turkeys, etc., and gen-

American writer Israel Shenker lives in Scotland. He wrote on the restoration of Calke Abbey, another English stately pile, in the July issue of SMITHSONIAN.

Stone Hall at Houghton, Norfolk, is a Palladian cube, dramatically designed by William Kent, based on hall in Inigo Jones' Queen's House at Greenwich. Room is truly a cube, 40 feet high and 40 feet square.

erally over the chin in claret, strong beer and punch."

The Duke of Chandos, at Cannons, employed a choir for his chapel and had them sing daily at dinner. Chatsworth, Blenheim and Wargrave all had private theaters. To build Kedleston Hall, in the 18th century, Sir Nathaniel Curzon removed an entire village, and so did the 18th-century Duke of Argyll when he constructed Inveraray Castle.

Leading contender for supremacy in the mortar-and-limelight line was Bess of Hardwick (p. 47), born in 1520, daughter of an impecunious English country squire. At about age 12 she wed a 14-year-old who died within a few months and left her his property. At 27 she married wealthy Sir William Cavendish, persuaded him to buy the manor of Chatsworth, and built a considerable house there. Sir William St. Loe, Grand Butler of England, left her even wealthier. Her fourth and richest husband was the 6th Earl of Shrewsbury. The Earl had seven great houses, and Bess four of her own. When Shrewsbury died, Bess—dignified by one historian as "the termagant Countess"—turned at age 70 to the building of her masterpiece, Hardwick Hall (p. 45), which Jackson-Stops has called "magical," and Nigel Nicolson, "one of the most beautiful buildings ever created." The building survives, property of the National Trust.

The names of the game

Enthusiasts rebuilt country houses and remade themselves. During the reign of Henry VIII, one of his men-at-arms, to secure the benefit of association with the great Roman family of Caecilii, changed his name from Sityllt to Cecil. In 1571, William Cecil was created Lord Burghley. On inheriting an estate from his grandmother's brother, Richard Pennant, George Hay Dawkins tacked Pennant onto his own name. Sir Roger Newdigate left Arbury Hall to cousin Francis Parker, who took the name Newdigate, which eventually became Newdigate Newdegate. The 20th century brought Admiral Reginald Aylmer Ranfurly Plunkett-Ernle-Erle-Drax.

The third wife of Bendor, 2nd Duke of Westminster, recalled that on her first visit to his splendid greenhouses at Eaton Hall she casually mentioned that there were no orchids. On returning from the honeymoon, she found a greenhouse crammed with orchids, and a botanical laboratory with an orchid specialist in white coat breeding new varieties. Elizabeth Bulwer-Lytton used to walk from Knebworth House to church followed by two footmen in knee breeches and silk stockings, one bearing her Bible, the other her prayer book.

Peregrinations depended on the calendar—when did stalking and grouse seasons open, when were salmon and trout available. Many went to London for the Season, to spas, attended balls and race meetings, but nothing matched the traffic from country house to country house, from slaughter to slaughter.

Birds were nurtured into sloth, then annihilated wholesale. In Victorian times, the Duke of Westminster used to ask guests offhandedly, "Care to come out and see if we can pick up a pheasant or two?" He and his all-too-willing guests would then slay a thousand pheasants before lunch. He had a hunting lodge, a shooting lodge, a fishing lodge. In 1913, Lord Burnham ran a shoot that killed 4,000 pheasants. "Perhaps we overdid it today," he said to the Prince of Wales. The 8th Duke of Beaufort was the most widely known sporting figure of his day. During one season in the 1850s, he spent 102 days hunting. At hunt breakfasts, he provided for a thousand appetites. One of his children told a guest: "We are not allowed to hunt more than three times a week till we are five years old."

But the destruction of game was not the only rural pleasure, and though there was a stubborn prejudice against any exercise in which the horse was not the active partner, other seemly exertions won favor—archery, cricket, croquet, badminton, tennis, billiards. There was the occasional scholarly lord, but intellectual pursuits were rarely favored. Country-house libraries—often used merely as sitting rooms—traditionally included books about fishing, shooting and hunting, and one of the most treasured volumes in the house was usually the game book, which meticulously recorded the daily bag. Peripatetic aristocrats might scour the Continent for art treasures to bring back, but houses were adorned not only with canvases by foreigners, but with mounted heads and stuffed animals from domestic haunts.

Hospitality on the grandest scale

In the Middle Ages, country houses were fortified strongholds staffed by men-at-arms, with an elaborate hierarchy descending from the head of the household, who was served on bended knee, with a carver to offer meat, a cupbearer to pour drink (and even hold a cup in place to catch drips from exalted chin).

Gradually the lord and his immediate relatives took to eating in greater privacy, though hospitality could still be on the grandest scale. When the Earl of Warwick came home for a visit from 15th-century wars in France, he brought 76 people for a fortnight. On Christmas Day, 1507, the Duke of Buckingham had 182 "strangers" to dinner, and 12 days later 319.

Henry VIII might be king, but what really stirred him was the status of country-house owner, and at his death he owned 50 houses. Courtiers of the imperious Queen Elizabeth I lavished fortunes on building and improving great country seats in hope and dread of a

Nude statue at foot of Knole's Painted Staircase is of Giannetta Baccelli, mistress of 3rd Duke of Dorset.

Knole's Cartoon Gallery, 90 feet long, is named for copies of Raphael designs for tapestries (left wall).

royal visit. At Theobalds, Lord Burghley, as Lord Treasurer, endured 13 visits from Elizabeth, who brought along about 150 people each time she bestowed her favor. Burghley had to enlarge his house and vacate most of it to make room for the royal party. Sir Christopher Hatton, Lord Chancellor, built a vast house at Holdenby, kept it staffed for ten years, and the Queen never turned up, not even to solace him when his debts became hopeless.

A great house required imposing dimensions, many apartments, a site insuring privacy, and an impressive approach with vast parks and gardens. The Middle Ages saw the introduction of great hall and tower. After Palladian refinements came a delight in the Gothic—deemed somehow Christian—with extraordinary examples such as Strawberry Hill, built by Sir Robert Walpole's son Horace, and extravagant Fonthill Abbey, home of William Beckford. No sooner was Fonthill finished than its 225-foot central tower fell. It was promptly rebuilt, only to fall once again.

The largest country houses had grand public rooms, including drawing room, dining room, gallery, library, breakfast room, morning room, master's study, mistress' boudoir and, later, billiard room, and smoking room—a male preserve. At Osborne, country house of Queen Victoria and Prince Albert on the Isle of Wight, every doorway was surmounted with the entwined initials V and A—except for a solitary A above the entrance to the smoking room. At Tettenhall, before 1882, a telegraph linked ground-floor dining room with tower smoking room.

For all the wealth of country-house owners, comfort and convenience took centuries to develop. The four-poster bed was a response to the absence of corridors, with rooms serving as passages to other rooms; bed curtains could be drawn to assure privacy and warmth in rooms poorly heated by open fires. The British took slowly to central heating, and the 17th Duke of Norfolk maintained that the lack of central heating in the main rooms at Carlton Towers, in Yorkshire, had helped preserve them. The 1st Duchess of Marlborough called her enormous Blenheim Palace "that wild, unmerciful house" which could not be tamed even by "a vast number of feather beds and quilts, all good and sweet feathers, even for the servants."

To help preserve themselves for posterity, nobles commissioned artists to paint their portraits, and built great galleries in which to display themselves and kin.

They were hung there in 1701 by 6th Earl of Dorset. The serpentine plaster ceiling is by Richard Dungan.

Chamber at Knole is known as Venetian Ambassador's Room. Bed, made for James II, dates from 1688.

Visiting Wilton House early in the 18th century, Daniel Defoe reported that the walls were so encumbered with paintings and sculpture that there was no room for more. West Wycombe, in Buckinghamshire, was so big that, after living there 15 years, Lady Dashwood was astonished to discover the Bust Room—where odd statuary pieces were put to rest. British treasure hunters searched for booty high and low. The Duke of Northumberland's Syon House has 12 verd-antique columns supposedly dredged from the bed of Rome's Tiber River (p. 55).

Country-house proprietors also imported artists and artisans to deal with woodwork, plasterwork, fireplaces, ceilings, floors and canvases. At Burleigh House, one artist spent 12 years painting ceilings and staircases; to improve his disposition he was furnished with coach and horses, his own table and servants, and generous pay.

Noted Nigel Nicolson, who spent a good part of his youth at gargantuan Knole, in Kent: "The people who could afford to build such houses formed a very small circle. They all knew each other, and their children intermarried down the generations. In one house you will find a portrait of a girl who reappears as châtelaine of another and whose daughter becomes mistress of a third, like the three-generation link between Althorp, Chatsworth, Blenheim and Castle Howard."

Edmund Burke called Knole "the most interesting thing in England." It was palace to five successive Archbishops of Canterbury, royal palace to Henry VIII, a gift from Queen Elizabeth I to her cousin Thomas Sackville, who served as Lord High Treasurer and became 1st Earl of Dorset. He remodeled it with the help of the finest craftsmen. In Elizabethan days, the Sackville fortune was such that the family was called Sackfill and Fillsack.

The house, at Sevenoaks, Kent, covers four acres and has, according to sedulously nurtured tradition, seven courtyards, 52 staircases, 365 rooms. With its sprawling array of pinnacles, chimneys and gables, Knole resembles a medieval town. "It has the tone of England," said Vita Sackville-West, who was born at Knole.

When she was ill as a child, her mother complained that it was 300 steps between her room and Vita's. There are three long galleries, each adjoining a state bedroom. By tradition, James I slept in the King's Room, and its silver furniture will be at the National Gallery. Knole's public rooms offer a king's ransom

of venerable works of art, including rare Caroline and Jacobean furniture.

In the Restoration period, Charles Sackville, 6th Earl of Dorset and scapegrace of the first order, enjoyed the favors of actress Nell Gwyn, who rose to even greater eminence as favorite of King Charles II. Nell called Sackville her Charles the First.

Vita wrote of the Sackvilles that they were "too prodigal, too amorous, too weak, too indolent, and too melancholy." They also had a particular penchant for Terpsichore. The 3rd Duke of Dorset lost his heart and Garter—ribbon of the premier order of English chivalry—to Italian dancer Giannetta Baccelli, who performed in public with his Garter around her head. The Duke installed her at Knole, and servants—stumbling over her name—called her apartments "Shelley's Tower." Gainsborough and Reynolds painted her, and she was sculpted, prone on a couch, naked save for a rose in her hair. The sculpture is prominently displayed at the foot of Knole's main staircase (p. 50).

The 2nd Lord Sackville, who never married, had seven children from his alliance with Pepita, a Spanish dancer. When he went to Washington as British Minister, he took along daughter Victoria, age 19, as his hostess. Along with numerous others, President Chester A. Arthur, a widower, reportedly proposed to her, but she married her first cousin Lionel Sackville-West and then captivated a string of admirers including William Waldorf Astor, J. Pierpont Morgan, Auguste Rodin and Sir John Murray Scott, whose largess allowed Knole to be kept up, and whose relatives called the Sackvilles "the locusts."

Victoria's daughter Vita married Harold Nicolson, the diplomat-author, but was no less devoted to others, including Virginia Woolf, whose novel *Orlando* is about Vita and Knole. Vita's son, publisher Nigel Nicolson, documented the unusual liaisons in his *Portrait of a Marriage*, a fine book about his parents.

Unable to maintain Knole, the 4th Lord Sackville arranged for custody to be transferred in 1946 to the National Trust. Paying visitors (86,000 in 1984) are admitted to 15 of the rooms, and the Sackvilles have private apartments. The garden is open the first Wednesday of each month, May to September. The present Lord Sackville calls them "black Wednesdays."

England expected even Americans to do their duty by the country-house tradition. By 1836, three Caton sisters from America had completed a hat trick by marrying Lord Stafford and the Marquesses of Carmarthen and Wellesley. America surrendered fortunes to rescue impoverished nobility and gain cherished titles, producing the likes of Ladies Curzon, Paget and Cunard. Consuelo Vanderbilt was pressed into marriage with the 9th Duke of Marlborough, and her dowry went to renovating Blenheim. She disliked the palace, as well as her husband; they later separated. The Princess of Pless wrote: "How I should hate to be May Goelet, all those odious little Frenchmen, and dozens of others crowding round her millions. An English Duke doesn't crowd around—he merely accepts a millionairess." The Duke of Roxburghe accepted May Goelet.

With the Industrial Revolution and the growth of finance came a new class of candidates for the peerage, seekers after the glamour of a country house within a country estate. Extension of the franchise to lower classes relieved country-house dignitaries of their privilege of deciding who should go to Parliament. Agricultural depression and the declining value of land obliged many in the upper classes to sully themselves by going into business.

Railroads and the motorcar made it easier to get

Hardwick Hall's Elizabethan kitchen has a sunken floor to increase height; it is now a visitors' tearoom.

As formal as a red-coated platoon of guards, dining chairs stand at attention in Blenheim Palace's saloon.

The splendid room is still used for grand occasions, as it was during the 1st Duke of Marlborough's day.

The Racing Room at Woburn Abbey, Bedfordshire, is a haven for all students of the breed to admire.

Illusion of continuing series of rooms is created by painting mounted in closet of library at Dyrham Park.

about, and country-house weekends became ever more popular. In addition to helping courtship and encouraging political alliances, they indulged friends in rounds of pleasure. After breakfast—cold meats, fish, game, eggs, bacon, sausages, kidneys, toast, muffins, butter, marmalade, fruit, coffee, tea and chocolate—guests pleased themselves about how they wasted their time. Dinners accounted for added victims of the higher gastronomy, with 30 or more dishes, battalions of footmen advancing and retreating with burnt offerings. After dinner, ladies withdrew and men stayed at table to drink and smoke and talk politics. Then the two groups reunited for party games and bridge. During the 19th century, as the dinner hour retreated, famished guests were introduced to salvific refreshment. At one large country house, afternoon tea was served in 11 different places. At another, a miniature railway was constructed in the drawing room, with hot muffins stopping at all stations.

Eventually, show-business people were accepted as guests at country houses, and even Jews, after several prominent, wealthy ones like the Rothschilds and the Sassoons were befriended by the Prince of Wales who became Edward VII. Sir Philip Sassoon's hospitality was, in the words of frequent guest Lord Boothby, "on an oriental scale." Boothby described one gathering: "Winston Churchill arguing over the teacups with Bernard Shaw, Lord Balfour dozing in an armchair, Rex Whistler absorbed in his painting, Osbert Sitwell and Malcolm Bullock laughing in a corner." At the end of World War I, Sir Philip lent his country house, Port Lympne, for peace conferences.

Establishment of police and a national army had long since emancipated servants from doubling as men-at-arms. With ceremonies simplified or eliminated, carvers, cupbearers, trumpeters had disappeared. More women came into service, employed to cook and clean, and they posed less of a strain on employers' resources. Footmen who had walked or run beside an employer's carriage or horse were brought inside the house to wait at table.

By the middle of the 17th century, country houses were built with back stairs, reinforcing the separation of servants and masters. Less decorous functions and people were secluded from the view of proprietors. William Beckford required his gardeners to mow the lawn at night, when they would not spoil his view. Owners built tunnels under their lawns for the passage

A scholarly spirit pervades library of Boughton House, Northamptonshire; it dates from the 1690s.

The palatial Ante-Room of Syon House, Middlesex, is one of architect Robert Adam's masterpieces.

of servants. The illusion was fostered that work was done by magic, with servants unseen, unheard. The Duke of Portland fired any housemaid unfortunate enough to meet him in the halls. In a more liberal establishment, housemaids were simply required to face the wall when family or guests appeared.

Servants were assigned quarters in attics, in kitchens, above stables, even in airless cupboards accessible only by ladder. At Holkham Hall, footmen slept four to a bed.

Distinctions belowstairs were as elaborate as in the stately regions above. In grand houses, principal servants—such as butler, housekeeper and head cook—might be served meals by a footman or pantry boy in the steward's room. A duke's valet gave his arm to the housekeeper, and sat to her right; a royal lady's maid came on the arm of the steward. Liveried servants and the under-maids ate in the servants' hall, with second butler and head laundry maid presiding. Visiting upper servants without evening dress had to eat in the servants' hall. The positions were endless and could include baker, confectioner, footman, running footman, bailiff, first groom of the chambers, chambermaid, housemaid, maid of all work, park keeper, gamekeeper, head gardener, clerk of the stables, coachman, under-coachman, postillion, dairy maid and laundry maid. The 4th Duke of Northumberland had His Grace's Manager of the Steam Plough.

Basements and servants' wings were warrens. Butler's pantries had cupboards, a plate safe, a plate scullery, a table for cleaning silver. The butler was responsible for table linen, silver, drink, oil lamps, brushing of clothes and shoes, and for furnishing writing tables (via footmen or groom of the chambers). At Flete, in Devon, footmen removed the electric lamps each morning, returned them when it became dark—a hangover from the time when oil lamps were taken away to be filled and trimmed. The housekeeper was in charge of housemaids and still-room maids, responsible for cleaning, for the linen, for tea, coffee, sugar, cakes and preserves. In her room were linen presses and cupboards for china. Kitchens were supplemented by pantry, scullery, meat larder, game larder, fish larder, dairy and dairy scullery. Witley Court, a Victorian country house, had shoe room, knife room, lamp room, brushing room, washhouse, mangling room, drying room, ironing room, folding room. At Kinmel Park, one room was used solely for ironing newspapers.

Just the place to curl up on a lazy afternoon with a book is this library at Chatsworth, which has one of the greatest collections of books still in private hands, as well as fine selection of Old Master drawings.

At Anglesey Abbey, guests' shoelaces were ironed every morning before breakfast. One wonders if they noticed.

Right through Victorian times, kitchens were distant from dining rooms, to prevent smells from assailing guests, so food was often cold by the time it reached the table. The Duke of Richmond and Gordon rigged up his butler with a pedometer, and found that the faithful man logged more than 19 miles in a day.

Wilton had 50 men working in the garden, and the head gardener walked round it eight miles daily, in top hat and tails. Asked how many gardeners she had, Winnie, Duchess of Portland, couldn't remember, and sent for the head gardener. He sent for a deputy. In 1893, the 15th Earl of Derby had 727 servants.

Lady Mander, who lived at Wightwick, spoke of "Victorian standards of conspicuous inconvenience." Menservants were forever lugging coal from the coal house. Since bellpulls made servants readily available, maids were summoned to put another coal on the fire. To provide baths for their ladies, maids had to carry

The carpet is Axminster, woven when the room was altered to its present appearance, about 1830.

hot water in brass vessels along long corridors and up stairs. Consuelo Vanderbilt, as Duchess of Marlborough, bewailed the paucity of sanitary facilities in country houses, and told of maids—bearing sponges, towels and underwear—queuing "in sulky enmity" for the rare bathroom on behalf of their mistresses.

It was customary for guests to tip servants at the conclusion of a visit. Eaton Hall forbade tips, but awarded servants the presumed equivalent. The bonds of loyalty were often strong, but theft, bribery and embezzlement were common concerns. The Duke of Rutland kept stewards for his Derbyshire, Cambridgeshire, Lincolnshire, Leicestershire and Wiltshire estates—and two auditors to keep them honest.

Existence of an upper class that enjoyed country houses depended on the collaboration of an under class of servants whose ancestors were bound to obeisance and service by ties of poverty, family, tradition, even gratitude. Young people were driven to arduous, and sometimes thankless, service by lack of alternative employment, by ignorance of the wider world, hopes of economic security and good food, or at least regular leftovers, a chance to travel, glory reflected from employers, and expectation in retirement of a cottage and a pension.

After World War I, servants were not eager to return to domestic service, while rising death duties and taxes made life ever more difficult for country-house owners. Competition from industry meant higher wages for domestic staff—reluctant to accept long hours, cold comfort and inferior status. Labor-saving devices came only partially to the rescue.

The beginning of the end

The problems of a class not used to serving, in a society with fewer prepared to serve, helped accelerate the destruction of country houses. P. G. Wodehouse, whose fictional Blandings Castle exhibited vintage perfection, found reality falling short. In 1925 he wrote from Hunstanton Hall, a nonfictional pile in Norfolk: "It's one of those enormous houses, about two-thirds of which are derelict. There is a whole wing which has not been lived in for half a century . . . it's happening all over the country now—thousands of acres, park, gardens, moat, etc. and priceless heirlooms, but precious little ready money." Twenty years later he complained: ". . . what the devil does one write about these days, if one is a specialist in country houses and butlers, both of which have ceased to exist?"

At Frampton Court, property of one tenacious family for 800 years, Henriette Clifford noted recently: "The family have always had property but no money to go with it." Her mother called Frampton "the lovely millstone."

In 1943, when the Germans were reported planning to bomb English country houses, characterized as haunts of bloated plutocrats and aristocrats, James Lees-Milne, the National Trust's historic buildings secretary, termed *that* "the depths of human degradation." But it took less than bombing to begin the destruction of the heritage. Sir Roy Strong, director of the Victoria and Albert Museum, estimated that in the first 30 years after World War II about 250 houses "of architectural and historic importance" were de-

molished. Many disappeared when preservation orders would have prevented destruction. Others have been converted into hotels, schools, offices.

To stave off the evil day, country-house owners opened their houses to the paying public and resorted to desperate stratagems to swell the gate—safari parks, pop concerts, motorcycle scrambles, free-fall parachutists, elusive ghosts. Lord Brooke, of Warwick Castle, which draws more than half a million visitors annually, complained that after all the trials of maintaining country houses, people like himself were being caricatured as berobed and coroneted clowns pocketing tenpenny pieces. A last resort for many owners has been to turn their houses over to the National Trust to preserve and display.

Mark Girouard, a scholar whose books on the architecture and social history of country houses have become justly celebrated, spoke of "a cult of the country

Castle Howard, setting for the TV series of Evelyn Waugh's novel *Brideshead Revisited*, is huge presence.

house . . . people like to imagine themselves living in it, and therefore go to visit country houses."

The passion for visiting country houses was not born in this century. Chatsworth and Castle Howard have been open to the public since they were built. And in 1801 a visitor to Blenheim noted: "We were three-quarters of an hour in the house, and five companies arrived to see it before we left." Housekeepers earned tidy sums showing people around. The one at Warwick Castle amassed more than £30,000, and when the Earl was going to have to sell some pictures, she offered to bail him out.

Country houses have thrown up all manner of people—crotchety and amiable, egalitarian as well as snobbish. The dowager Beatrice Sharp, at Hill of Tarvit, in Scotland, was so devoted to the classless society that she refused to ride in the Rolls-Royce unless the telltale silver hood ornament was removed.

This is a view of the south front, completed in 1714, a crowning work of designer Sir John Vanbrugh.

African bronze figurines, amid capped sample vials, are being tested at the Rathgen Laboratory in Berlin.

By John Dornberg

Artists who fake fine art have met their match—in the laboratory

Process, atomic absorption spectrophotometry, uses dissolved metal and light for analyzing alloy makeup.

Specialized researchers have a new bag of sophisticated high-tech tricks for telling frauds and forgeries from the real thing

Art from the Cyclades is part of the earliest Greek art, and examples of it are rare, especially Cycladic marble idols whose cultural significance remains a mystery. It is big news in the art world when even one such piece appears on the market. But in 1965 more than 100 figurines began circulating among dealers in Europe, fetching prices of up to $30,000 from museums and collectors. By 1967 many more had been traded and some experts were questioning their authenticity.

Of course, they could detect no overt signs of forgery, but they had an uneasy feeling because all the figurines, while stylistically different, had exactly the same patina, even though they came from epochs from about 3000 to 1400 B.C.

The skeptics did what more and more museum directors and collectors are doing nowadays. They sought help from a science called "archaeometry"—a field in which physicists, chemists, geologists, art historians, restorers and archaeologists pool their knowledge in the service of art sleuthing or other forms of materials identification. In the service of art, the researchers work with the latest technologies and the most sophisticated tools. They determine the age, materials and production properties of all kinds of art, and in the process expose forgeries.

One of these specialists is Josef Riederer, 45, professor of archaeometry at West Berlin's Technical University and head of the Rathgen Research Laboratory at Berlin's State Museums of Prussian Cultural Property. It was Riederer who confirmed the suspicions about the Cycladic idols: they were fakes.

The art of scientific detection

Proving it, however, was a painstaking task of scientific detective work, for as Riederer points out, they were really rather competent fakes and "to this day the workshop that produced them has never been identified. The trail vanishes in Marseilles."

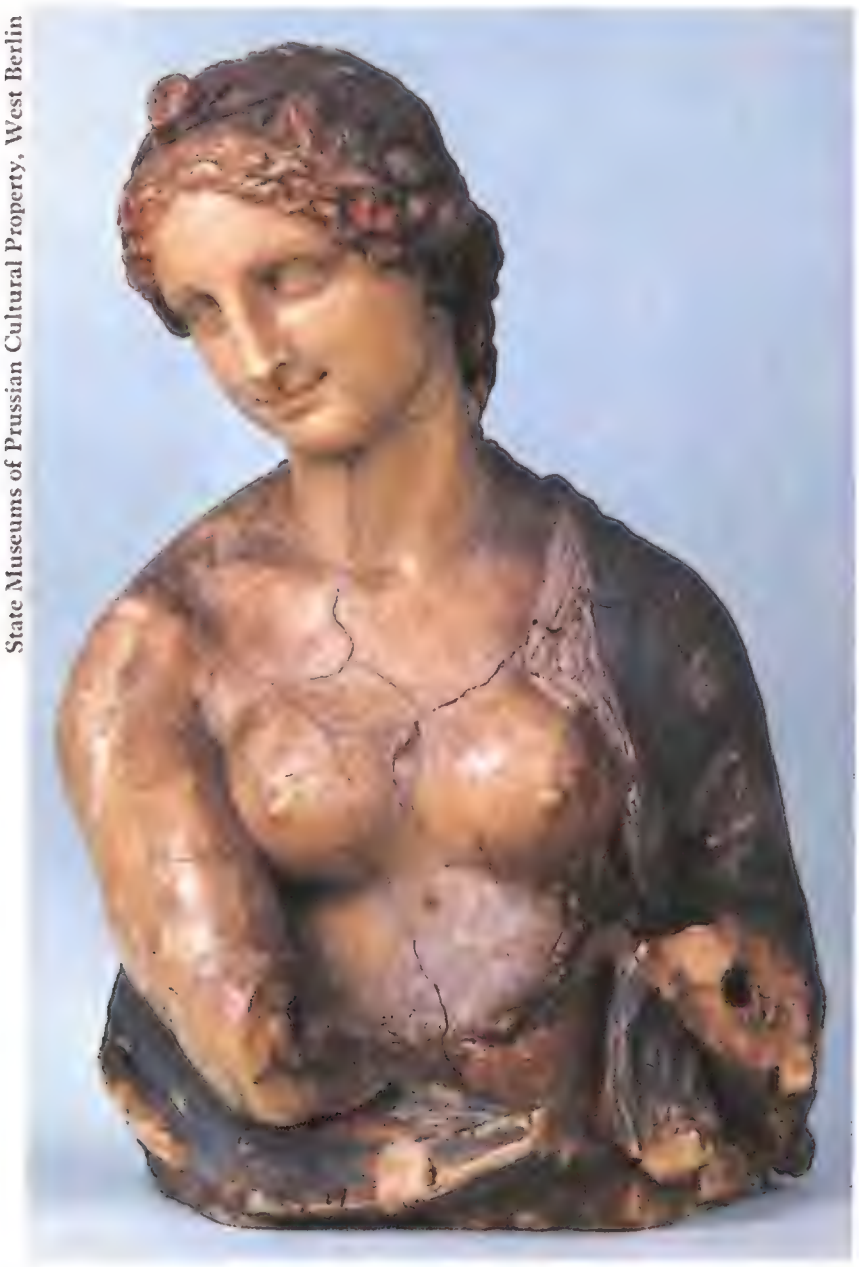
First Riederer contacted eight major museums in Europe to obtain minute specimens from about 60 authentic figurines. Then he put both suspect and authentic samples—a few grains of marble and patina from each idol—through a series of tests.

Emission spectroscopy, by which the composition of unknown compounds can be determined, revealed no questionable chemicals but did point to an extreme purity of the encrusting patina. Riederer, a geologist by training, plowed on.

He tried x-ray diffraction and microscopy, two other techniques for analyzing unknown compounds, and scored. The patina on all the doubtful idols consisted of calcium sulfate—gypsum. That in itself would be no proof of forgery if, for example, the ground or surface water on the Cyclades had a high sulfur content.

Photographs by Michael Freeman

Josef Riederer holds fake ceramic objects purported to come from ancient Greece, Latin America, Turkey.



State Museums of Prussian Cultural Property, West Berlin

Flora, identified last year as a 19th-century bust, was for decades thought to be by Leonardo.

But, fortunately, Riederer also had available the results of an American development-aid project to improve irrigation on the islands, and it showed that there is no water source with enough sulfur to cause gypsum to form on marble.

Petrological examination turned up traces of pyrite, an iron mineral that forms brown halos and spots on marble when it rusts. But there were no spots and halos, and the pyrite in the suspect idols was quite fresh—a sign that the figurines could not have lain in the soil of the humid Cyclades for 40 to 50 centuries.

Finally Riederer examined the doubted pieces under ultraviolet light, and they fluoresced in red violet—a sign of fairly new marble. Old marble, like that of ancient sculptures, usually gives off a spotty bluish-yellow color.

"It's a classic example of what we can do to expose fakes these days," says Riederer. "Art forgery is as old as art itself, and there are famous cases of forgeries based on forgeries. But counterfeiters are becoming more clever and ingenious from day to day. Fortunately, so are we. Our job is to keep a step ahead of them with modern science, to make detection so precise, comprehensive and reliable that the forgers' input to outsmart us becomes so costly and time-consuming that their profit margin dwindles. It's a bit like a race and, on the whole, we are winning it."

Many of the techniques that are now the nemesis of art forgers were discovered or applied only within the past few decades and, according to Riederer, hardly a year now passes in which archaeometry is not aided by some new device or method. The pace is dizzying.

Modern science comes to the rescue

Thus, radioactive carbon-14 dating, developed in 1947, is what won American chemist Willard F. Libby his Nobel Prize. Thermoluminescence analysis, a method for determining the age of ceramics, first applied by Oxford University's Martin Aitken, was virtually unknown 25 years ago. Dendrochronology, the study of tree rings, found greater acceptance as a means to date paintings on oak panels, and certain antique furniture or wood sculpture in the 1970s (SMITHSONIAN, July 1985). And differential thermal analysis, by which the age of many paintings can be determined through the polymerization of their oil medium, is just coming out of the experimental stage.

The modern tools and methods of art testing are both mind-boggling and tongue-twisting: scanning electron microscopy, atomic absorption spectrophotometry, x-ray fluorescence spectrometry and x-ray diffraction analysis, neutron activation analysis, chromatography, mass spectrometry, infrared spectrophotometry and dilatometry, to name some.

To thwart would-be thieves, some museums display replicas rather than originals. Copies of Roman coins and clasp were made at Rathgen lab by electroplating metal onto mold suspended in blue copper solution.

"These techniques and apparatuses are almost foolproof," says Riederer as he shows me around the lab, located in the museum complex across the street from Berlin's Charlottenburg Palace. They are used in a kind of four-pronged approach to validate a work of art: analysis of the materials from which it is made, study of how it was made, evaluation of its symptoms of aging and determination of its absolute age.

"For example," says Riederer, "isotopic analysis of marble reveals the amount and proportion of various oxygen and carbon isotopes in the stone. That can tell us whether the piece came from Paros, Naxos, the Hymettus range or from the Pentelikon, all in Greece, or from Italy or Turkey. Or take bronzes—metal artwork that often enough includes objects made of brass. Since zinc was not used as a component of copper alloys until Roman times, bronzes said to be Egyptian, Greek, Etruscan or early works from Asia Minor must be forgeries if they display high zinc concentrations when subjected to analysis by x-ray fluorescence or atomic absorption spectrophotometry."

Former Newsweek *correspondent John Dornberg lives in Munich. He wrote about artist Magdalena Abakanowicz in the April issue of* SMITHSONIAN.

Roman bronzes were copied widely in the Renaissance and again in the 19th century. The latter test would reveal how much arsenic, antimony, nickel, cobalt, silver or iron is in a piece, an indication of when and where it was cast, for alloys differed with changing milling and smelting techniques.

Gold forgeries can also be spotted by their metallic composition. The gold available to forgers today is invariably less than 100 years old or has been melted down from jewelry. X-ray fluorescence spectrometry will reveal traces of solder and other impurities that genuine ancient gold jewelry and coins do not have. Other metal art objects can be examined just as readily. The important thing in such analyses is having reliable data for comparison: for example, the medieval guild rules regarding the alloys and composition of metal art objects, or information on the availability of ores in different locales.

In paintings, the pigments are important clues. To be sure, pigment analysis has been used since the 19th century. Moreover, many of the pigments used by the Old Masters are now again commercially available in any good art-supply shop. Does that mean a determined counterfeiter merely has to buy a supply of lead white, cobalt green or Jan Vermeer's once inimitable

Egyptian relief, above, could fool anyone. At right, under ultraviolet light, purple aura indicates fake.

Platinum cups undergo heating to 1,200 degrees C.

ultramarine, made from powdered lapis lazuli? That would certainly be easier than in the days when the Dutch forger of Vermeer, Han van Meegeren, bought 12,000 guilders' worth of lapis lazuli stones from a jeweler and ground them to powder. But the archaeometric detective can tell the difference.

"We just hold the picture in front of the x-ray fluorescence spectrometer," Riederer explains, "and within a few minutes we get a computer printout of the key elements in that part of the painting. If it does show lead-based pigments, we can remove microscopic samples of them and turn to mass spectrometry to determine the concentration of lead-210. That lead isotope has a very short half-life of only 22 years. Any significant concentration of it in a painting purporting to be old is a sure sign of a fake. Moreover, under the scanning electron microscope, which magnifies 20,000 times and produces three-dimensional images, we can usually tell how the pigment was produced. Because the Old Masters ground theirs with a pestle in an apothecary's mortar, the grains are coarser than those pulverized by modern machines."

Over the centuries not only materials but also techniques of workmanship have undergone great changes. Forgeries of ancient gold jewelry, for example, can be detected by microscopic examination of the wire, granulation and sheeting. Ancient gold wire was made by twisting a hammered strip, leaving a spiral pattern. The drawplate, which ancient craftsmen did not have, leaves characteristic longitudinal grooves that are visible by microscope. An archaeometrist can also tell if a ceramic vase, a marble statue or a bronze object has been worked by tools that did not exist centuries ago.

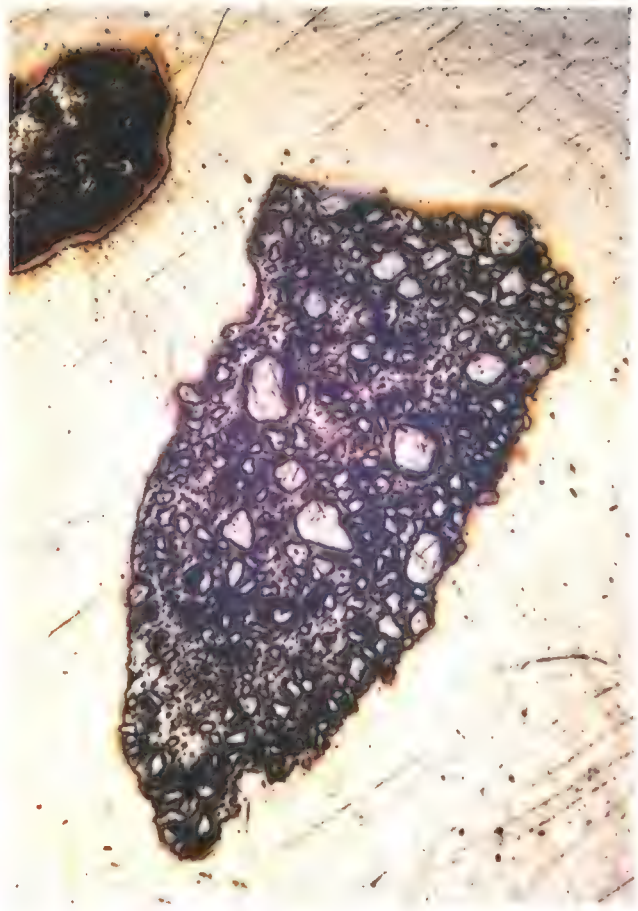
Synthetic organic materials can be reliably dated by analysis and comparison of the findings with information about the historic development and use of compounds. That is how Riederer exposed the Berlin Sculpture Museum's controversial *Flora* (p. 62) as a 19th-century copy.

Flora is a life-size, seminude wax bust with an enigmatic Mona Lisa smile. She has been the subject of heated debate ever since Wilhelm von Bode, then director of the Prussian Royal Museums in Berlin, bought the bust in 1909 for 185,000 gold marks, believing it was the work of Leonardo da Vinci or one of his assistants. But doubts about the authenticity of the expensive acquisition arose immediately.

That year a son of Richard C. Lucas, the British sculptor, declared his father had made the figure in 1846. It had been broken accidentally and his father had later repaired it. That would explain its many cracks and missing forearms. If one bothered to look inside it, he said, one would find the 19th-century newspapers that had been used for the patch-up job.

Von Bode indignantly rejected the claim. He insisted that *Flora* was a work of Leonardo that Lucas had somehow obtained for restoration. That would explain the son's seeing it in the studio and the newspapers inside it. *Flora* continued as a Leonardo for more than 70 years, and so did the controversy. In 1984 the Rathgen Laboratory took a closer look at the figure's wax, which turned out to contain a synthetic organic acid that was not produced until 1833. "She's definitely a 19th-century creation," says Riederer.

Process provides materials for x-ray fluorescence work.



Enlarged, patina of a Roman tool, left, is authentic. Sample, right, is fake, indicated by the etched pits.

But she will probably retain her place of honor in the museum, along with so many other copies, imitations and outright forgeries around the globe. "Please don't ask me how many identified fakes there are in how many museums or private collections throughout the world," Riederer adds with a wan but knowing smile. "There are many examples like *Flora*. A lot of money and careers hang on them. There is also an ostrich mentality among curators and collectors.

"During the past decade we have examined approximately 3,000 suspect objects, and nearly half turned out to be fakes. I saw many of them in museums in the United States, and after they were again exposed as forgeries there, I rediscovered them in Japan. It's one of those unmentionable secrets of the art world."

Forgery and imitation also have such a long history and tradition that artistic criteria of authenticity have become blurred. Of the 140 or so Roman busts and statues in the Antiquarium of Munich's Residenzmuseum, Riederer estimates that half are possibly Renaissance copies and free-style imitations.

One distinction between such pieces and outright forgeries is patina. Making an object look old is the primary aim of counterfeiters. Thus one of the major tests is determining the authenticity of the patina. Riederer says that there is no limit to what forgers will do. "One old trick is to bury fake bronzes in a pile of manure for a few weeks to give them a patina, or treat them with saltpeter or vinegar. That gives them that 'old' green and reddish copper-oxidation look. To the naked eye the result is indistinguishable from the genuine patina produced by centuries of exposure to carbon dioxide or chlorine. But under a microscope we can tell the difference between natural and instant aging. A really old piece will have large malachite crystals that can grow only during centuries of exposure to natural chemicals in the soil and environment. Forgeries treated with acids, whether in the manure pile or from a bottle, will have very fine, powdery layers of synthetic copper-oxide coating as well as telltale corrosion marks."

Of the many sophisticated new techniques for exposing forgeries, two are differential thermal analysis and thermoluminescence testing. Differential thermal analysis helps to date oil paintings that are less than 100 years old. The method can pinpoint the age of any painting done during the past century or so to within 10 to 15 years. It is based on a relatively simple and well-known fact of organic chemistry: the oils used as binding media in artists' colors require some 90 to 120 years to dry completely and polymerize. Until they do, they react differently—in physical and chemical terms—under the influence of heat.

This "exothermic effect," as it is called, can be measured by heating a microscopic specimen of the paint in an electronically controlled and electrically powered laboratory furnace. Newer oil bases will produce distinctive and characteristic thermal readings.

Thermoluminescence analysis, to determine the relative age of ceramic and terra-cotta objects, is based on a phenomenon first observed in the 17th century by Robert Boyle, the Anglo-Irish physicist, who held a diamond near the flame of a candle and observed that it glowed in the dark.

Showing up the fine-art forgers

It was close to 250 years later when scientists discovered why. The glow is caused by natural radiation damage to the material from the radioactive elements —potassium, thorium, uranium and rubidium—that it contains and from radiation it has received from its environment. This inherent radiation "reorients" some of the electrons, especially in clay and stone, placing them into a barely stable stationary state of stored and pent-up energy, into a kind of "electron trap." When the material is heated, these electrons are released—like imprisoned energy—and give off photons that cause the glow that is called thermoluminescence. The greater the thermoluminescence, the longer the piece has been around.

In the 1950s American researchers came up with the idea of using the phenomenon for geological and archaeological dating. In England, Martin Aitken of Oxford University's Research Laboratory for Archaeology, one of the founders of the science of archaeometry, pioneered the use of thermoluminescence to date ceramic art objects. The theory is both ingenious and logical. When the clay from which the object is formed is fired, the "trapped electrons" are released and the natural thermoluminescence is extinguished. The finished piece that comes out of the kiln is pure of past radiation damage. But the radioactive elements that caused the initial damage are still present. The whole process starts again, measurable many years later when, under intense heat, thermoluminescent glow can be observed once more.

Think of it as a timer. When the object is fired, its thermoluminescence clock is turned back to zero and it begins ticking anew. Several years, decades or centuries later, when you reheat it under lab conditions, you will get an approximate idea of how long it has been around since last coming out of the kiln.

Relative age is ascertained by electronically recording a "glow curve," produced by heating a pulverized specimen from the object—a Greek vase, Peruvian Nazca water jug or T'ang Dynasty figurine—to about 500 degrees C in a small lab furnace similar to that used in differential thermal analysis.

To be sure, there are some hitches and obstacles. To avoid disfiguring the object or doing damage that would diminish its value in case it is genuine, only a very small specimen can be taken—generally no more than 50 milligrams—which is obtained by drilling a hole in an unobtrusive spot that a restorer can repair. There can be more than a 20 percent margin of error. An object 1,200 years old, for example, could be misjudged as either 240 years older or younger.

Thermoluminescence analysis is at its best in determining great disparities in age, and has proved to be highly reliable for exposing forgeries and imitations—and in a number of cases embarrassingly revealing, as Riederer demonstrated by opening a wall cupboard whose shelves were crammed, floor to ceiling, with dozens of red-figured Greek vases, amphoras, kraters and urns. A West German art dealer had bought them, paying as much as $20,000 for some of the larger pieces. But all were fakes.

There is, according to Riederer, a veritable explosion in art forgery, and he sees a number of reasons for it. One is that the market is "pretty empty," especially of ancient art, because the countries of origin prohibit the export of antiquities. For another, as a result of mass tourism—especially to Asia, the Middle East and Latin America—objects which are produced as copies and sold as such for a few dollars, return to Europe and the United States in a flood. Well done, with eye-appealing patinas and synthetic aging effects, many eventually re-emerge as forgeries because they are traded at flea markets and their provenance is unknown. Riederer has a storeroom of such junk from Mexico, Peru, Tunisia, Egypt and Italy.

A million marks for "ancient" gold

Moreover, there is a growing clientele that buys art as a pure investment. Such people are ideal targets for premeditated forgery. "Antique gold jewelry is being bought wholesale as an investment," Riederer says, "and there are forgers who produce wholesale. One of the more tragic cases involves a man who came here with a whole attaché case of gold jewelry—40 stunning pieces of Greek, Etruscan and early Roman work—for which he had paid over a million marks [$300,000] in Crete. A closer look at the stuff under the electron microscope exposed it immediately as modern craftsmanship, and x-ray fluorescence brought the proof of modern gold."

Finally there is the runaway inflation in art prices.

Selection of pigment and media (agents for holding pigments in suspension) samples is from the Rathgen Laboratory's reference collection. Samples are for comparison with pigments and media under analysis.

Ready for metallographic microscope are samples of Roman tools. Those in upper-right corner are fakes.

Electron microscope scans fibers of old Peruvian cloth. Threads are mounted, gold-plated for examination.

Master copyist Christian Goller poses with work in progress, replacement for altarpiece burned in 1983.

When museums and private collectors are willing to pay seven- and eight-digit prices for artworks that only a decade ago would have sold for a fraction of the amount, no wonder there is an explosion in forgeries.

Are there any objects that defy the prying eye of archaeometry? "Oh many," Riederer concedes. "Granite and ivory pieces. They seem to undergo no changes of aging that we can detect. It is hard to tell the difference between Renaissance and neoclassical imitations of Greco-Roman sculpture. We have a lot of trouble with all contemporary art. But I am confident that we can catch most things purported to be old."

Which is a claim that Christian Goller challenges with a sly smile. Goller, 42, a West German restorer by vocation, describes himself as "an imitator, not a forger" by avocation. He imitates just about every period from Byzantine to Biedermeier, with the emphasis of his work being on German Old Masters—Cranach, Dürer, Holbein and Grünewald. One of his "Grünewalds," a wooden tablet portraying St. Catherine, made forgery history in the 1970s when it fooled the Cleveland Museum of Art out of $1 million.

Trained at the Stuttgart State Academy's Institute of Restoration and Painting Technology, Goller claims that any determined forger, at least of paintings and polychrome wood sculpture, can easily outwit the archaeometric sleuths—if he is careful and willing to invest enough time and effort. "Take old pigments," he says. "I make my own, exactly the way the Old Masters did. We were taught how at the academy, and it is something every art restorer must know. If I *really* wanted to get by the half-life of that lead-210, all I would have to do to produce a pigment that passes the test is to use the lead from a 200-year-old clock weight."

He is equally skeptical of differential thermal analysis, claiming that one would need merely to expose the oil to ultraviolet light for about four months, and it would pass the test. "Everything can be synthesized," says Goller. "A good forger will examine x-ray studies of the master's works to see how he built them up, analyze the pigments and reproduce everything exactly. He will get old, hand-spun, hand-woven canvas, which is not hard to obtain, or old worm-eaten wood, which is even easier to find.

"The craquelure of an old painting, caused by hardening of oil and varnish, is one of its chief characteristics," Goller continues. "It not only varies from century to century but from artist to artist. Cranach's, for example, is very distinctive: a tiny cobweb pattern which any art expert recognizes. I can duplicate any craquelure by first removing the finished painting from its flexible support, then remounting it on the old canvas or wood, and baking it in the oven. That is delicate, painstaking work, but a standard restoration task. The end result will defy almost any authenticity test. It's all a question of how much effort a forger wants—and needs—to make."

"That's exactly the point," replies Riederer. "How much effort? There have always been forgeries and there always will be. But the question for the forger is profitability. We publicize our results and investigations, and counterfeiters can read our scientific papers and inform themselves. But no matter how much we divulge, the question is still whether the forger wants to go to the trouble and the expense to fool us. That's why I say we're winning the race.

"Besides," Riederer adds, "the majority of counterfeiters are not out to fool science and scientists, but art buyers, and by the time the fake is in the market and someone takes the trouble to have an analysis done, the counterfeiter has disappeared. So does the forgery, for that matter. At least for a while. Then it resurfaces a few years later."

Archaeometry may be the nemesis of art forgery, but it is no antidote to gullibility and no defense against the mysterious ways of the art world, as the case of those Cycladic idols shows.

"Yes," Riederer chuckles. "Long after I had published my report on them, I happened to be in the United States and found them all over the place—in Boston, New York and Washington, in museums, private collections and art dealerships. And to the best of my knowledge, some of them are still on the market."

When tested by lead-shielded gamma-ray detector, "ancient" African terra-cotta figure proved to be fake.

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Article and photographs by Victor Englebert

Crossing Patagonia: one long, long ride in a hard, lovely land

From ocean to ocean, the author learns a lot about horses as he immerses himself in the immensity of one of the world's wild places

I do not sleep well in the wilderness. I miss my wife's warm matching shape next to me, and the exhilaration generated in me by the natural environment keeps my mind racing. Tonight I am also getting up every other hour to check two horses I have tethered at the ends of long ropes, one to a post, the other to a strong branch of a solitary willow 20 paces away. I am camping in an abandoned shepherd's shack. A tempestuous wind rattles the corrugated metal roof and whistles and whines through every interstice.

At 2 in the morning, for the second time, I put on my down jacket and, bent against the gale, push a hundred yards to the tree. I do not immediately believe what the narrow beam of my flashlight reveals. But then I see the broken branch against the sky and the many horse tracks on the ground and understand that one of my animals, an imperfectly castrated stallion who loses his wits at the sight of a female, has followed a mare.

I return to my sleeping bag to wait for dawn. But I do not sleep. Because my time is limited, I lament the hours I will lose finding my horse. I am weary of my ignorance, which is causing me too many misadventures. As if the blisters the sun has inflicted on my face and the crevices the cold has opened on my fingertips

In the semidesert beyond Paso del Sapo in Argentina, the vegetation covers less than half the pebbly soil.

were not enough, I keep asking myself, What am I doing alone in the middle of Patagonia?

The idea came on an April morning last year in the Argentinean Andes. I was photographing a mountain-ringed grassland when two mounted gauchos pulling a packhorse appeared in the distance. With their black hats, capes and creased boots they seemed to have strayed from an old Zorro movie. I ran to intercept them and snap some pictures, and they trotted past me with tolerant smiles, hands high in salute.

It had not been the gauchos alone. It had been the magic of that name—Patagonia. Some names have the power to summon a thousand images, to bewitch a mind. Such is their sway that they can change the course of a life.

I determined to cross Patagonia in the traditional way: on horseback. It would be very difficult. I knew how to ride, but otherwise very little about horses. Certainly I am no gaucho; rather, I am a Belgian photojournalist who now lives in Colombia. Crossing Patagonia seemed a way to escape our motorized age, to enter roadless areas with magic names.

Patagonia, the South American cone shared by Argentina and Chile largely south of the 37th parallel and the Río Colorado, evokes an endless tableland of thornbush scrub. But though much of it is indeed so, Patagonia also includes the Andes chain and the Chilean islands. The name Patagonia was not meant to designate a geographical unity but a land of big-footed Indians, the *patagones*.

The map suggested an east-west crossing, from the Atlantic to the Pacific Oceans. A 560-mile journey would traverse semiarid scrub and grassy steppe, snow-capped mountains and glacier lakes, and temperate rain forest. Because of its varied wildlife, the Península Valdés on the Argentinean coast would be the best place to start, it seemed. I would end at Chaitén, on the Chilean coast.

It was my plan to stay at *estancias* (large ranches) when possible, to camp when necessary. Some of my route would follow dirt tracks that run west to the Andes. In places I would be following nothing more than a path, and some of the time would ride cross-country, where there is no sign of civilization from horizon to horizon.

On paper the idea looked perfect. It started to look preposterous the day my plane landed in Trelew, a commercial center of 52,000 inhabitants. My fellow passengers' neckties and nylon stockings had tacitly warned me that I was headed for no Wild West. But I could hardly believe that not a single gaucho walked the streets, not one horse loafed on the plazas.

I had an introduction to a veterinarian and *estancia* owner in Puerto Madryn, 39 miles to the north. Jorge Iriarte received me in his office at the back of his pet, drug and accessory shop. Young and cheerful, he swept away my misgivings. "I have an *estancia* on the Golfo San José, in the Península Valdés, where you want to

Map traces author's path, right to left, across the cone of South America. Line is not necessarily a road. He traveled as much as 37 miles in a day, but delays meant he averaged just under 19 for the entire trip.

The author used aptly-named Loco as a packhorse for most of the trip while riding the calmer Colorado.

Female southern elephant seals doze on the shore of the Península Valdés, a secondary breeding area.

start your journey," he said. "I could drive you there tomorrow and leave you for a few days with my two gauchos. And while they teach you a few essential things, I would mobilize my friends to help you find two horses."

The next few days I rode horses with José, *capataz* (foreman) of the ranch, which was called La Isla, and Raúl, a horse tamer; and sometimes I rode alone. In the Golfo Nuevo whales were giving a daily show. Exploring the wild coasts, I discovered elephant-seal (above) and sea-lion rookeries. Above them king shags clung to narrow ledges beaten by the wind and surf, while kelp gulls and South American terns wheeled noisily in the sky.

From the height of my horse I commanded an unobstructed view of the thornbush scrub. Herds of graceful guanacos roamed the steppe, stopping curiously to watch me taking their pictures. Lithe rheas, South American ostrichlike birds, many with a dozen chicks behind them, dashed off in wild zigzags. Armadillos went about what looked like very serious business, for they hardly took notice of me, even when inches from my horse's hooves. Awkward maras, giant long-legged, short-eared Patagonian harelike rodents, basked in the sun, sitting on their haunches like dogs and from a distance looking like them. Sneaky skunks and gray foxes stole through the bushes.

At the ranch one afternoon, a truck arrived and out of it the driver pulled a tall horse to show me. Though I liked his gait, I found him unused to the bit, which he protested by throwing his head violently sideways. His dark chocolate coat, dotted by countless scars, was a written story of horse fights. His aggressiveness was the result of his being a *toruno*, an imperfectly gelded animal. If stallions are difficult to handle during their yearly rut period, gauchos would tell me later, *torunos* behave the year round as if they were in rut. Foolishness was his salient trait. When he had his fits of madness he raced around the paddock and ignored me entirely. When he spotted other horses across the fence he neighed vehemently and became hysterical. Trampling the wires or pushing an unlocked gate and crouching under a cable only a yard high, he found a way to escape and cause havoc. I decided to name him Loco, the mad one.

On returning to La Isla one afternoon, we unexpectedly found Iriarte waiting for us. He had come to sell me one of his own horses. (Ah, Iriarte! What would I have done without you?) Slightly smaller than Loco, my new horse was, however, plump and strong, a gentle and good-looking Criollo gelding. And having mounted him, I decided to relegate Loco to the rank of bearer. Because of his light, reddish-brown coat, I named the new horse Colorado.

Next morning, when José and Raúl lit the fire and helped me saddle and load the horses, they seemed to me quieter than usual, and even sad. When I reiterated my gratitude for all their kindness, they answered simply that now their lives would be duller again. At 8 o'clock I was finally on my way.

The sun shines in a clear blue sky as I have wished it would all those days and the horses are walking fast. Tiny clusters of sheep lift their heads to watch us pass. A young rhea dashes from the shadow of a bush. Maras hop across our path. Birds sing in the thornbush. I am happy and would like to scream it.

Little by little the farm buildings fall behind and then there is no further landmark to judge our pro-

gress. The horizon makes a perfect circle around us, which our headway does not alter. Indeed, I have the impression of riding a treadmill.

Weary and hungry, we reach our goal at 8, as the sun is setting. A tall gray-haired white man, who is obviously the *estancia* owner, and a shorter and darker man, his peon, observe me from the barn entrance with undisguised surprise as I dismount stiffly. They welcome me warmly, however, as soon as I have presented myself. "Water your horses at the pump, unload them at the barn and enclose them in the corral next to it. I will give them alfalfa," the tall man says. "Then bring your knife to the living room. You arrived just in time for dinner." Three more men are inside, including my host's younger brother and handsome nephew, for tomorrow they will shear the sheep. With bread and wine, white and red, we eat the usual juicy *asado* (barbecue) pulled from the fireplace and placed amidst us. I go off to sleep in the barn at 11, and the steady munching of my animals outside lulls me to sleep.

I get up at 5, reorganize my luggage, take some pictures, and leave at 9—later than yesterday, but confident that I will lose less time today.

The road rises inexorably—straight from the horizon behind me to the horizon before me—and is the only feature in an immense, monotonous landscape. The fences, which I keep passing at hourly intervals (they are equipped with gates), are the main hindrance—also the main respite from the endless ride.

The afternoon seems interminable, and in the end I lose an hour going to a windmill which has no house near it. A young Mapuche couple, with their three small children, receives me after that. Though they look poor, their hospitality is as generous as any.

With sun blisters irritating my lips and chin, I go on the next morning toward Sierra Chata, a low truncated mountain that rises about a thousand feet. It is the first sign of change in the landscape. The road circumvents Sierra Chata, and now a wall of low mountains bars the horizon ahead. Two days ago I spotted a lonely bunch of flowers among the thornbush, yesterday two others—different. Today I see more, and the intense heat is tempered by a soft breeze.

I laugh as I remember the questions from some gauchos. They cannot understand why I am taking this trip. "Have you got no car?" they ask. "Are you looking for a job? Are you a missionary? Are you fulfilling a vow?"

One day I reach the *estancia* Las Margaritas at 5:30, three hours before sunset, happy to have so much daylight left to write. "You drink maté?" is the lonely

Belgian photojournalist Englebert has ridden widely in Peru and Morocco and traveled by camel caravan in the Sahara, Ethiopia and Afghanistan.

A gaucho leads his packhorse across a plateau. Just such a sight inspired the author to make his trip.

Guanacos, which tolerate extremes of heat and cold, inhabit the arid rangeland in groups of 20 or so.

On the *estancia* San Ramón, near Paso del Sapo, this pet rhea takes its place near the stove every evening.

peon's first question as I dismount. "I haven't sipped any for three days. Had nobody to share it with," he complains to me.

I avoid the bitter stuff whenever possible, but before such a plea I am defenseless. A strange notion, that maté tastes good only in company. But what congeniality it expresses. The problem for me is that my companion will not let me go now. My arrival is to him a gift from God, and he does not care if I have a thousand things to do. His case is so very different from mine. "I only swept half of it today," he apologizes as he shows me to the barn. "Otherwise I would have nothing to do tomorrow."

Thirty miles before Telsen the whole landscape starts to heave up and higher mountains surge against the sky. We arrive at the Arroyo Telsen, whose sinuous course is lined with poplars, willows and other trees in whose shade I lunch. We follow the river valley, and at 3 enter Telsen.

The cop on duty is posted in observation at the police station window at the entrance to the village. He does not lose his opportunity to hear an unusual story and to check deep suspicions. He requests a proof that I did not steal my horses, and asks me whether I came riding for lack of money to pay for the weekly bus. He takes an hour of my time grilling me, then declares himself ready to help me in any way he can.

A plump young shopkeeper with a mop of black hair and an easy smile volunteers to take charge of my horses. Later, as the only bed available at the local inn is in a two-bed room already occupied by a foul-breathed snoring drunkard, he also offers me a room.

Several days later, I unload at the *estancia* Los Berros for lunch. Two peons who have seen me approaching lock themselves up in the kitchen. They open the door when I knock on it and give me permission to graze my horses, but they do not invite me to share the *asado* they are eating. They do not even offer me maté. So I sit outside for a couple of hours, eating from my supplies and writing.

A lingering fear of Butch Cassidy

Without a word, the two men leave in a pickup, but I find them again two hours later in Mallín Grande, yet another *estancia.* In a corral, under the supervision of a little old man, they are helping six other gauchos at a *señalada,* a session of cutting sheeps' ears and tails to identify their sex and ownership. Nobody answers my greetings or even acknowledges my presence as I dismount.

"I need information!" I shout this time. "Could anyone tell me whether I will find a place to sleep two or three leagues from here?"

This time the little old man gives an order to let me

inside the corral and presents himself as Dr. Abdo Abdala, owner of the *estancia*. "Two leagues from here on my land, well off the road but easy to spot because of a willow next to it, is an unoccupied shepherd's shack that you are welcome to use," he says. "A stream runs by it, which wagon caravans once used as watering point after a long and dry crossing, and for which the place was called 'Aguada la Noche.' " Literally, "Watery the night."

I thank him and get permission to take pictures, and the gauchos, though still shy, giggle with pleasure at being photographed. I ask Dr. Abdala the reason for that change of attitude. "Though the region is quiet now," he explains, "our people have not forgotten the foreign *bandoleros* who once terrorized it. Like La Inglesa, an English woman bandit, who was such a crack shot until her death in 1915 at the hands of the police, she frightened the bravest man. Or Butch Cassidy and the Sundance Kid."

Under a lugubrious, heart-chilling sky, I trot the horses to Aguada la Noche, which we reach at sunset. The location, at the mouth of a deep canyon from which flows a cool stream, is quite scenic. Unfortunately, I find but two places to tie up the horses: a post, and because the willow trunk is too close to it, one of the tree's branches. Why, under the circumstances, I do not think of attaching Colorado rather than Loco to the branch I do not know, but that lack of foresight brings about Loco's escape, which I recounted at the beginning of this story.

Abandoning my luggage in the shed, I mount Colorado and for an hour press him up the stony canyon. We do not find Loco there, but in lateral valleys we startle many herds of guanacos. Back at the willow, I drop the reins to see if Colorado will lead me to his companion. But *such* a companion—why would he want to find him?

A distant dust cloud makes me cut back at full speed just in time to stop a small ambulance taking two ailing people to Puerto Madryn. Having tied Colorado to a bush, I hitch a ride back to Mallín Grande. There I find Dr. Abdala still overseeing the *señalada* and he agrees to help me find Loco. Riding in his old jeep, I am soon back with Colorado; Olivari, Abdala's administrator, who has accompanied us, will ride him. Dr. Abdala drives me several miles farther along the road and then inland to a large pond where his horses like to idle.

Suddenly I see my Loco, his dangling rope reduced to a shred, friskily trotting after two white horses, one of them a mare. They gallop away as soon as they see us. Running after them in a large circle, I herd them for an hour toward the shed at the foot of the mountain, then wait for Olivari. When he finally appears, an hour later, he cannot catch Loco and must herd the three horses all the way back to a corral at Mallín Grande, where he arrives long after we have lunched.

A plump middle-aged neighbor of Dr. Abdala has joined us. Called Camargo, he looks very preoccupied. "What incompetence!" he says of Olivari. "Making those poor horses gallop all afternoon for nothing. Your *colorado* is very tired, and you must saddle that *loco* now." He says this completely unaware of my horses' names, which shows me how well I chose them.

A touch of the whip and a wild ride

I agree to saddle Loco, which I had not done before because he is so bony. He protests the bit with increased vehemence, frantically kicks poor Colorado and then refuses to budge. "You must use a whip," says Camargo, forgetting his earlier pity and showing me a *rebenque*, a thick leather-lined stick ending with a wide beltlike strap. "Let me show you." And saying so, Camargo takes my place in the saddle and with two vigorous lashes sends Loco off in an apocalyptic gallop to the cheers of the other men. Whether Camargo intended to go that fast is not clear to me, but he takes an awfully long time to return.

"Uf! I thought he was going to take me back all the way to Valdés," Camargo jokes. "*Dios mío, que caballo!* My God, what a horse! The man who sold it to you had no conscience. Come to Bajo Amarillo, my *estancia*, and I'll exchange it for a decent one."

Though he looks like an incredibly nice man, I do not know him enough to trust him and do not commit myself. Having transferred the saddle back to Colorado, I take my leave and under an ever-dismal sky return to Aguada la Noche, which I reach at exactly the same time as last night. The similarity of conditions should alert me to the possible repetition of last night's event, but I am not superstitious. Tonight I

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At Mallín Grande, Felidor Camargo (left) and Aldo René (red pom-pom) clip the ears and tails of sheep.

While horse tamer Raúl watches, foreman José pours hot water over some maté leaves packed into gourd.

A modest dwelling houses the peons at La Isla, the ranch on the Península Valdés where journey began.

With the biological richness of the coast behind him, the author spent four weeks crossing the semidesert.

tether Loco to the post and Colorado to a stone-filled wooden case.

The next morning, contrary to my habit, I saddle Colorado first to have him ready in case Loco escapes again. I have not yet untied Loco when I realize Colorado has disappeared. I rush back hoping to find him behind the shack, but he is not there. I run down to the stream and up the closest hill. With gale and dust stinging my eyes I vainly scan the immensity.

Although ashamed to ask the same people for help, I return to the road to Mallín Grande. Halfway to the *estancia,* I see a car approaching from the opposite direction and am delighted to recognize Dr. Abdala's old jeep. He and Olivari listen patiently to my voluble and embarrassed explanations. "We're on our way to see our good friend Camargo before going on to one of my other *estancias,*" says Abdala. "He'll help you find your horse."

"Horses always go back home"

After a brief conversation with Camargo, my friends take leave. Camargo calls a peon, a boy of 16, and together we board his pickup. "Horses always go back home," Camargo instructs me. And he drives past the shed path to the next fence. There he stops, gets out, studies the ground and leads me to where Colorado, trembling, lets himself be caught easily.

Back at the *estancia,* Camargo shows me to a bedroom, then we sit down to lunch with another peon. "This afternoon I will let you choose one of my horses and Loco will remain here," he says peremptorily as he lifts a glass of white wine to my success.

Of his many horses, says Camargo, only three could be useful to me. He lines them up in front of me and lets me choose. I settle for the roundest and strongest one, in spite of his 15 years. I name him Zaino, the Spanish name for dark chestnut color. Camargo and his two peons set out to shoe him immediately.

"Now you must ride Zaino for a while, and let Colorado rest," Camargo recommends. "To help that poor animal, I will transport his load tomorrow to Gan Gan, where I will vote in a referendum on the Beagle Channel islands. We've been for too long at daggers-drawn with Chile over them, and it is not in the best interest of Patagonia. My peon Aldo René, who also wants to vote, will accompany you on horseback."

Ah, Camargo! You are like Iriarte. Would that the rest of the world were like you. Your concern and generosity have reconciled me with my journey, which from here on will be smoother and more enjoyable. Like Iriarte, you are a landmark.

Gan Gan is more than 37 miles away, but with a fresh mount, an unloaded packhorse and good company, that will not seem far. We leave at 7 the next morning, after Camargo has presented me with his whip, Aldo René pulling Colorado. We climb a stony path up to the plateau and I look down on Loco a last time. Kicking and biting and running wildly, he enjoys himself tremendously in Camargo's herd. If I had any misgivings, I lost them here.

The cold wind is cutting my nose, lips and ears, and I cover them alternately with my free hand. The woolen mittens I have put on for the first time do not succeed in warming up my fingers. But the landscape, like that which I have seen all my life in dreams, is grandiose. A flat green immensity surrounded by remote snowcapped mountains which the morning sun dyes in many hues, pink tufts of wool gracing the magenta sky; foxes, maras, armadillos and guanacos seeming to welcome us to their realm—and not a path to remind me of civilization.

We trot toward a perfect cone which seems taller than the other mountains because of its proximity. We will be trotting until noon with complete ease, stopping only once in a while for my companion to smoke a cigarette. I remember the two gauchos who had made me dream of this trip last year, and feel as close to the emotion I came to seek in Patagonia as I will ever be.

Now the plateau is flooded by melted snow, and to enter Gan Gan we must cross a bloated river with the water over our stirrups, for the bridge is impassable to animals. Raúl Carro, the good-looking young mayor whom we find conversing on the dusty street, invites me to share his house.

In the morning Carro takes me in his ancient Oldsmobile to the hospital for a hot shower. The inn's café is closed, but after lunch I find the kitchen jammed with people drinking. Having ordered a round of drinks, I start packing, and everyone comes out to help and wish me good luck. Outside of Gan Gan a violent

A horse is shod for the trip, something it normally does not need in the sandy soil of the Peninsula Valdés.

The author and a guide followed the Río Futaleufú as they descended the western slope of the Andes.

squall suddenly makes me gasp as it whirls my horses about. Relying on the only map I have managed to get —an unclear, reduced photocopy—I leave the Gastre road to turn left toward Paso del Sapo into a broad valley walled in by low mountains and dotted with the rotted bodies of sheep and horses, victims of winter.

As the hours pass and the heat increases, I worry that I may have taken the wrong road and wish that someone else would drive by. At 7, I find a water hole, but my exhausted horses get little kick from their refreshment. At sunset, which now occurs at 9, I tie them to a fence and make camp. My body is full of thorns, my nose is peeling in various layers and soon the cold makes me shiver. Every other hour I get up to move the horses to fresh spots.

At dawn I start wriggling in my sleeping bag and at 5, as usual, I cannot stand sleeping anymore and get up. Three hours later, at the junction of three roads, I find *estancia* Colelache, empty of people and the signposts at odds with my map. I take the road that seems closer to my general direction. In the mounting heat I am in shirt sleeves and my throat is very dry. While my horses drank at a pond in Colelache, I was unable to refill my empty canteen and now I fear that I may not find water for a long time. Half an hour later I return to the crossroads. I do not know what to do, only that I do not want to lose nine miles in a round trip to a farm I can see far down the valley just to ask for the way. But with the threat of thirst I have no alternative.

The *capataz* of *estancia* Nueva Era, an old German-looking man with short gray hair and mocking blue eyes, emerges from his room in underpants. To my great relief he informs me that I am on the right road and that the bifurcation to Paso del Sapo is about half a mile ahead.

In the evening three peons from other *estancias* arrive on horseback to help the old man shear some rams by hand tomorrow. One of the peons is from Taquetrén, an *estancia* I will pass. "After Taquetrén, four leagues from here, you will need a guide," he warns. "Ask one of the peons there to guide you to an Indian farm a league farther on along a lake. There, get a guide to Paso del Sapo. Don't try to go alone, you would get lost."

The peon has said that I would get lost if I tried to find the way by myself. But he has also said that the Indian farm was a league away along a lake, and there could be no lake in this hilly terrain except in the only depression I can see—perhaps behind the lake that waters Taquetrén. If I walk for an hour along this lake, and then climb a height, I might be able to catch sight of that farm. Meanwhile the horses will eat and rest.

I climb a hill and study the landscape. There is, indeed, a second lake after this one and at a league and a half I can see a solitary poplar, and to the left of it, at perhaps a hundred yards, what could be a row of stones, houses or bushes. Getting closer, I realize I was seeing only bushes after all. But the poplar is reason enough to go on, for in Patagonia trees are found exclusively near habitations. Now the bushes have become a fence, a herd of sheep appears resting under the tree, and three adjoining adobe houses are slowly emerging from their background.

A woman in red and blue comes out of a house, soon followed by others. But in seconds they have disappeared. As I get closer eight sheep dogs surround me with deafening barks. Keeping them at a distance with stones, I knock on each of five doors.

No response to a lost traveler

"Señoras!" I shout. "I am a lost traveler needing information. Please come out. I won't harm you." To no avail. But they may not have heard because of the dogs barking. I sit down against the wall waiting for them to be quiet. Fifteen minutes later I get up and try a new message in a louder voice. "I am a journalist traveling on horseback! I left my animals at Taquetrén! I need a guide to Paso del Sapo! I pay very well!"

No more luck. I shout like a lunatic, sending the dogs running. I can hardly believe it. Now that my audience can hear me, I repeat my message and add that the mayor of Gan Gan sent me. A door swings open violently and a man comes out. He speaks in a timid voice. "I am the peon of Taquetrén," he presents himself.

"Where are all the people here?" I ask.

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On the way to Telsen, Colorado (in front) and Loco drink from the milky remains of drying water hole.

"They are napping."

"Well, it's 3 o'clock. Wake them up. I need a guide. I'll pay very well."

He enters each house, talks to invisible people and comes out to rest against a shabby table with his arms crossed and his gaze lost in the distance.

"Well, what did they say?" I ask, when it becomes evident that he will not take the initiative.

"They keep napping," is his laconic answer.

A small tape recorder, to which I dictate my notes, is hanging from my neck. Suddenly I realize it may help me force this man's hand. Stepping to the side, I tell it, as I would under any other circumstances, the latest news, and from the corner of my eye watch the man fidgeting. As I hoped, he seems to believe that I am reporting to Raúl Carro in Gan Gan.

"Let's go see my old man, who lives a league away," he concedes. "Perhaps *he* will want to guide you. Otherwise, I will."

His father is not at the next Indian farm, but his fellow peon, a pygmy on a pony, is. We all return to Taquetrén, which we reach at nightfall.

Miguel, my guide, and I leave the next morning at 6:30 in a great cold. Trotting at top speed for four hours we cover half the distance in flat terrain and the other half up along a clear stream. I rejoice when we get to the foot of a small mountain, but too soon, for on the 45-degree path Miguel does not change pace. He does, though, on the other side, when on the steep way down, a gale threatens to throw us off the saddle —or worse, to throw our horses off the mountain. We reach Paso del Sapo at 1:30 and I part from Miguel after doubling his modest fee.

Next day I go on to Gualjaina, my eyes closed as a hot violent sandstorm shifts to an icy snowstorm. I must eventually walk to avoid freezing. Deafened by the elements, it is some time before I realize that I have lost my packhorse. Galloping with the wind at his back, Zaino flies as we return to find Colorado—exhausted, he has not strayed—and I reflect on how much easier my trip would have been if I had reversed my direction and had had the westerly constantly at my back. But, going from magnificent landscape to dreary desert, would I not have eaten my dessert first?

Six miles before Esquel, along a busy paved road, the landscape takes on a more human character—suddenly there appear billboards, electric wires and little farms and pastures full of barn animals fenced in by poplar trees—yet, because of the snow-capped Andes looming all around, it acquires grandness.

At the Chilean consulate I learn that although I may take my horses into Chile, I also must bring them back to Argentina at the end of my journey—something that will be impossible for lack of time. Having considered all of the alternatives, I decide to sell my friends and to go on with rented horses.

Héctor Vargas, the horses' owner, takes control of my horse when I feel like walking, lagging behind or running ahead to take pictures. With the security he gives me, and with his knowledge of the few people we meet, the rest of my journey unrolls uneventfully. For five rainy days we never stop following the course of a river or lake—first, Río Futaleufú, surely one of the most lovely rivers I have ever seen, and misty Lago Yelcho, a Japanese print. And always, looming in the background, snowcapped mountains on which the sun pours warm oblique rays or scatters in rainbows.

Chaitén, with its polychromatic painted wooden houses lining wide unpaved roads which cut each other at right angles, broods in the afterglow of dusk before lighting up like a Christmas tree. Héctor is gone to stay with relatives. I sit at the window of a restaurant on a hill above the town contemplating the ocean which, except for Isla de Chiloé, extends unhindered to New Zealand.

My journey ended at the Pacific, but in an important sense it ended high in the mountains when I parted with the horses that had brought me so far. Loco I had already left running happily with Camargo's herd. And in Esquel I finally sold the faithful Colorado and Zaino to a cheerful and youthful 62-year-old Italian named Domingo Ciacci, who bewitched me with his cooking. He already owned 16 horses which he loved like pets. He had sold a prosperous art gallery in Buenos Aires to set up a dairy and recreational farm. With him Colorado and Zaino will be in paradise, and they deserve it.

A mountain stream rushes through a lush rain forest halfway down the slope from Futaleufú to Chaitén.

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BUCKLE UP FOR SAFETY.

By J. Tevere MacFadyen

Houston's seaway shouldn't work, yet somehow it does

It's narrow, dangerous and polluted, but by any commercial standard the much maligned Houston Ship Channel is a huge success

When I first sight it, the oncoming ship seems tiny, an insignificant blip on the horizon. I am aboard the freighter *Aeneas*, outbound from the Port of Houston, headed southeast across Galveston Bay toward the Gulf of Mexico and beyond. The bay's broad expanse plays havoc with my perspective, making size and distance difficult to gauge. The vessel closes in on us faster than I'd expected and suddenly looms large. We appear to be moving straight at each other and indeed we are, for Galveston Bay, despite its considerable breadth, can be crossed by deep-draft commercial traffic only within the confines of a single slim route, the Houston Ship Channel, and we are both in it.

The *Aeneas* is a bulk-cargo carrier of Singaporean registry, primarily engaged in carrying steel from the Far East. After unloading in Houston, her holds are filled with grain for transport home. By modern standards she is not an especially big boat: 600 feet from bow to stern, with a 74-foot beam and a 35-foot maximum draft. Still, we are dealing here with something that is two football fields long and eight stories high above the waterline. In Galveston Bay, which is pocked with low shoals and "spoil" islands (made from silt dug up during dredging), the ships in the channel are far and away the biggest things around.

Outbound from Houston at dawn, a bulk-cargo carrier noses through crush of docks, plants and other ships.

Photographs by John L. Tveten

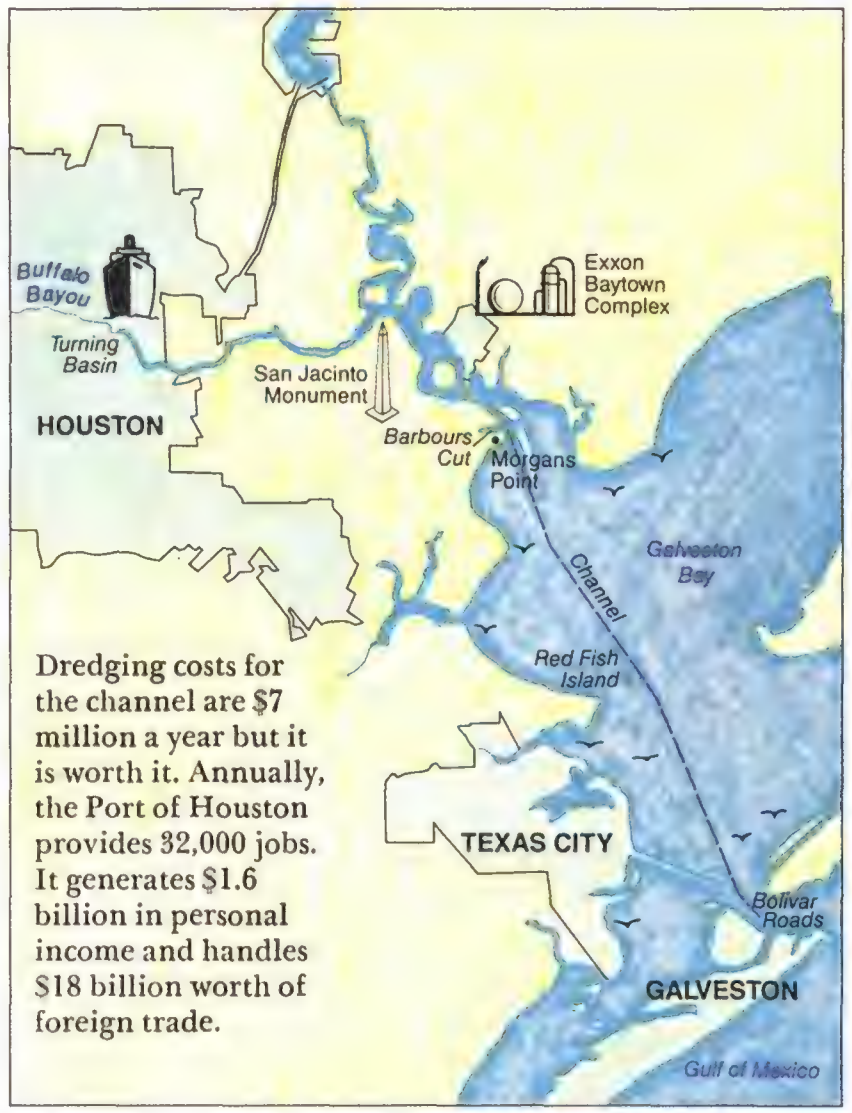
And getting bigger all the time. As the two vessels draw closer, my faith in authority begins to erode. The man in charge is not actually *Aeneas'* master but Capt. Ernest Reed, a licensed pilot whose assignment it is to guide ships safely through the channel. He is drinking a cup of coffee beside me here on the bridge. He does not seem nearly as concerned as I think he ought to be. He looks up from his coffee, calls out commands, casually lights a cigarette. By my reckoning, we're on a collision course. Captain Reed and his counterpart on the approaching vessel seem bent on self-destruction.

I am experiencing firsthand one of the channel's most durable legends: Texas Chicken. It is an adrenaline-pumping maneuver in which two passing ships steer directly toward each other, veering away at just the right moment and sometimes counting on the cushion of compressed water between them to help hold their hulls apart. It isn't as risky as it sounds. In fact, it is probably the safest possible way of handling the situation, and channel pilots have been doing it here for as long as anyone can remember. But it is terrifying. Just as I am about to avert my eyes, Reed orders a right turn and we sweep comfortably by with room to spare.

The city of Houston, about 60 miles inland, is the third largest foreign-trade port in the United States. That this should be so is a testament to Texan tenacity, for nothing in nature suggests that Houston ought to be a port at all. The city grew up alongside a shallow, sluggish bayou at a site chosen not for its superior navigational qualifications but simply because it was available for sale.

In the 1830s, speculators John and Augustus Allen, Houston's founders, advertised their paper city's virtues as a "port" and then, having made that preposterous claim, were obliged somehow to support it. Work to create a passable channel began forthwith and has continued unabated ever since. Almost 5,000 ships visited Houston in 1984, and every one of them came and went by way of the city's man-made link to the sea. About 40 feet deep, 52 miles long and seldom more than 400 feet wide, the channel meanders from the Turning Basin near Houston's gleaming downtown office district to Bolivar Roads, off Galveston, where it spills into the Gulf. It's in constant use, 24 hours a day, 365 days a year, and along its entire length are arrayed the icons of industrial prosperity: plants, refineries, factories and mills.

Texans are unabashedly fond of symbols. They fly their Lone Star flag at every opportunity and brand any handy surface with their state's distinctive outline. A fitting symbol in its own right, Houston's ship channel evokes much that is remarkable about Texas: the indefatigable zeal for development, the stubborn conviction that just about anything can be done, and the wherewithal to go out and do it. But the channel also embodies a darker side of Houston's ascendancy to the first rank of American cities. While its reputation as one of the world's most dangerous waterways is belied by an impressive safety record in recent years, no one denies that its potential for disaster is great. And al-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HOUSTON
San Jacinto Monument
Exxon Baytown Complex
Barbours Cut
Morgans Point
Galveston Bay
Channel
Red Fish Island
TEXAS CITY
Bolivar Roads
GALVESTON
Gulf of Mexico
Dredging costs for the channel are $7 million a year but it is worth it. Annually, the Port of Houston provides 32,000 jobs. It generates $1.6 billion in personal income and handles $18 billion worth of foreign trade.

The Houston Ship Channel runs for 52 miles from Turning Basin to Bolivar Roads near Gulf of Mexico.

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After guiding the freighter *Shirley Lykes* to a dock at the Port of Houston, pilot Ernest Reed disembarks.

though it may no longer deserve to be called "the nation's most poisoned and potentially most explosive body of water," as a Ralph Nader task force characterized it some years ago, it still reflects vividly the corrosive impact of uncontrolled growth. "It's a boondoggle," one environmentalist says, "but it works."

From my vantage point on the bridge at the beginning of the *Aeneas*' trip to the Gulf, the channel looked like one of the city's infamous expressways at rush hour. Its banks were lined with wharves and the wharves were lined with ships: cavernous car carriers disgorging fleets of Nissans and Toyotas, bulk carriers taking on tons of grain, tankers coupled by thick umbilicals to the refineries that crowd the shore. In between, in the slender passage that remained, a profusion of vessels jockeyed for position. I counted a dozen or more in the immediate vicinity, and my view extended for only half a mile before a sharp turn cut it off. It seemed inconceivable that we could thread our way through that throng, but the prospect did not daunt Captain Reed in the least. "It's not too bad," he allowed. "I'd say it's about average. I've sure seen it a lot worse."

For its first 15 miles or so out of Houston, the channel follows the winding course of Buffalo Bayou, the stream it was superimposed upon, twisting and turning seemingly at will. In places, it is a navigator's nightmare. "Up here we try to keep speeds down to five knots or less," Reed told me as we rounded a tight bend. Any faster, he explained, and the vacuum generated in our wake would be strong enough to snap the mooring lines of berthed vessels, literally sucking them off the wharves. To go much slower, however, is to risk the loss of maneuvering ability, with potentially calamitous consequences. Only a few locations along the narrow passage have been widened sufficiently to allow ships to turn around.

Ernie Reed is one of 56 pilots who earn a living shepherding ships in and out of the channel. At 36, he has spent 20 years on the water, the past six as a pilot. "I guess you could say I was born to it," he says. His father and brother are tugboat captains, and his mother commands the galley aboard the tug *Exxon Chicago*. A native Houstonian, Reed wears chrome-gray cowboy boots and speaks in a viscous Gulf Coast drawl. Like all channel pilots, he had to serve a two-year apprenticeship as a deputy pilot. Before pilots are eligible to do even that, they must have put in three years as a ship's officer or as a tugboat captain. The pilots work alternating 15-day shifts, conducting an average of 20 ships up or down the channel every fortnight. For this, each may receive in excess of $125,000 a year. "But I don't figure I'm overpaid," Reed says. "There's a lot of people's lives in my hands, and not just the ones on this ship. If you screw up with a liquid-petroleum-gas tanker in Houston, plenty of people are going to get caught."

Despite the channel's manifest hazardousness, or perhaps because of it, there have been remarkably few serious accidents. "Actually, it may be a blessing in disguise," says Comdr. Leo Tyo, who heads the U.S. Coast Guard's Vessel Traffic Service in Houston. "There's such a frightening combination here—narrow channel, big ships, dangerous cargoes. Everyone realizes they have to be careful." In 1979, the freighter *Mimosa* collided with the tanker *Burmah Agate*, causing a conflagration that lasted for more than two months. A

A U.S. Coast Guard officer at Vessel Traffic Service monitors ships' progress in channel on video screens.

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After veering from a collision course, two large ships pass rail to rail in the middle of the channel.

Six miles upstream from the Turning Basin, Buffalo Bayou meanders past west side of downtown Houston.

year later, a collision between a grain carrier and a barge laden with highly flammable butadiene required evacuation of residents along a one-mile section of the channel; another chemical barge burst into flames when it lost steerage and struck a bridge abutment. Nothing recently can compare with what happened one April morning in 1947, though, when a fire on a freighter full of ammonium nitrate detonated a blast that reportedly was felt 160 miles away, leaving more than 500 dead and obliterating a dock at Texas City, across the bay from Galveston.

That ship was anchored in a port. The Vessel Traffic Service is charged with seeing to it that accidents involving ships in motion do not occur in the channel. "We have plenty of scrapings and groundings," Tyo reports, "but they're usually fairly minor," the marine equivalent of fender-benders. Ultimate authority over port operations is held by the Coast Guard, which may order sections of the channel temporarily closed for reasons of safety. In practice, this rarely happens, and only under extreme circumstances, such as the ship-and-barge collision in 1984 that spilled several thousand gallons of jet fuel into the channel and led to a four-hour closure.

When acccidents do take place, help may arrive from different sources. The Coast Guard keeps specially trained and equipped crews on alert, as does the city, whose Hazardous Materials Response Team is stationed nearby. Private industry has also established an emergency response mechanism that addresses incidents within or alongside plants. Normally, the traffic service and the Houston pilots cooperate with shipping agents, the Port of Houston Authority and private dock and terminal owners to coordinate and schedule traffic. "We could never replace the pilots

Tugboat nudges a 587-foot-long tanker, the *Sealift Indian Ocean*, into a berth at Amerada Hess terminal.

Crane takes a tractor-trailer-size load from a Saudi freighter tied up at Barbours Cut Container Terminal.

with computers," Tyo says, but high technology has nonetheless found a niche.

If the Houston pilots have ice in their veins, the Traffic Service operators must have silicon in theirs. Though their duty room overlooks the channel, they can see only a small section of it. The Coast Guard officers attend to ranks of computers and video screens—eight remote-controlled video cameras are mounted along the channel banks—which enable them to track the movement of every ship. At designated stations along the way, captains are expected to report their positions and check on conditions ahead. "We're not really controlling the traffic so much as advising it," Commander Tyo explains. "We tell them what to expect around the next corner." I visited the Coast Guard facility on a slow day: the atmosphere was only mildly hectic. When things really heat up, says one operator, "it's like being in a crowded bar and trying to listen to six or seven conversations at once."

In the old days, channel pilots relied on a whistle system as their chief means of communication. Today, the VHF radio is their principal tool. With it they stay in constant contact not only with the traffic center but also with other vessels in the channel, tugs they may need to assist their passage, ships waiting in the Gulf for their turn to come in, the weather service, and their dispatcher in South Houston, who will arrange their next trips. The pilots form a tight fraternity and they exchange greetings over the airwaves in a wry, laconic shorthand. Now, for example, as the *Aeneas* lumbers across Galveston Bay, a low-riding freighter looms up before us at Red Fish Island and the radio emits a sudden, unmistakable cackle. Texas Chicken. Reed chuckles and acknowledges the challenge with a ululation of his own.

If conditions are favorable and there are no complications, a complete transit of the channel takes about six hours. The voyage provides an object lesson in the economic importance of what the Port of Houston Authority likes to call the "Fabulous Fifty Miles." The roster of corporations lining the channel's banks reads like a selection from the *Fortune* 500: Arco and U.S. Steel, Champion International and Diamond Shamrock, Phillips Petroleum, U.S. Gypsum, Union Carbide and Rohm & Haas. At the sprawling Brown & Root marine construction facility, Lilliputian welders scramble over gargantuan off-shore drilling/production platforms that will, upon completion, be loaded onto barges and towed out to sea. Cargill, the multinational grain merchant, maintains a mammoth grain elevator that alone goes a long way toward supporting Houston's claim to being the top wheat port in the nation. (Grain and grain products were the port's premier export by tonnage in 1983, followed by organic chemicals, heavy fuel oils and thermoplastic resins. Crude petroleum led the list of imports, with automobiles first by dollar value.) Exxon's Baytown Complex, on the channel's east flank, is the site of one of the world's largest refineries.

In addition to all of these and more, there are close to 40 public wharves where miscellaneous cargoes—from French apples to African zinc—are loaded and unloaded. At the Port Authority's Barbours Cut Container Terminal, eight giant cranes can lift whole tractor-trailer-size shipping containers on or off vessels in minutes. A 1982 study concluded that 160,000

J. Tevere MacFadyen wrote about hazardous cargoes in the April 1984 issue. His book, Gaining Ground, *is currently available in paperback from Ballantine.*

At Exxon's gigantic Baytown refinery, tankers use round "turning dolphin" (foreground) for mooring.

jobs in Texas and $1.6 billion of the state's income were port related, yet the average Houstonian's perception of the ship channel, if he or she perceives it at all, is likely to echo that of two teenage girls who gave me a ride back to my car the evening I returned from my trip aboard the *Aeneas*. "The ship channel!" they exclaimed in unison when I told them where I'd been, "It smells."

They're right. It does smell. Riding a freighter down to the Gulf is one way to see the Houston Ship Channel, but I gained a markedly different perspective by spending a day with biologist Wayne Crouch and other scientists from the Texas Department of Water Resources, testing the biological health of the channel. We launched a small runabout at Morgans Point, in the lee of a behemoth container carrier awaiting a berth at Barbours Cut, under flinty skies strewn with scudding clouds. For the next eight hours, we roamed the upper channel gathering samples, taking water from various depths and locations, seining for plankton, scooping up jars full of bottom mud. The water's color ranges from strong tea to opaque olive brown. Its odor evokes whatever's flowing into it nearest where you are: treated sewage, paper-mill wastes, refinery effluent, you name it. At best, the channel is a badly polluted but not outright poisonous stream. At worst, it is an evil, venomous sump. My companions kept a potent chloride-based disinfectant handy on board, and notwithstanding some evidence of recent improvements in the channel's water quality, they used it.

There probably never was a time when poor old Buffalo Bayou would have been mistaken for a pristine mountain stream. In 1837, one decidedly unimpressed visitor depicted it as "confined, with few exceptions to precipitous banks on either side covered with massive timber whose rich dense foliage throws a melancholy somber shade over its dark and sluggish waters. Throughout its whole extent it bears a strong resemblance to a canal." The first ship to make it all the way up to Houston, the 85-foot steamer *Laura*, spent three days getting there in 1837. "We had to rig what were called Spanish windlasses on the shore to heave the logs and snags out of our way, the passengers all working faithfully," wrote Francis Richard Lubbock, a young merchant and later a Civil War governor of Texas, who was one of those aboard. "Capitalists, dignified judges, military heroes, young merchants in fine clothes from the dressiest city in the United States, all lent a helping hand."

The Buffalo Bayou Ship Channel Company was organized in 1869 to deepen and widen the waterway and straighten out the bayou to Morgans Point, where it

Black skimmers, gulls and terns occupy shallows at Bolivar Roads, where channel enters Gulf of Mexico.

enters Galveston Bay. Cotton was still king, and by 1881 nearly two million bales of the stuff had been transported downstream. Regular steamboat service between Houston and Galveston commenced soon after the *Laura* had proved that the trip was possible. The voyage took seven to ten hours, and the $5 fare included "supper, lodging and breakfast."

As Houston's commerical prominence grew, city, state and federal authorities promoted the channel's improvement. The success of the channel, like the success of the city itself, owed less to logical necessity than it did to the natural pluck and audacity of Houston's citizens and founders. An 1857 newspaper report published in Columbia, Texas—a far better located but ultimately less successful community—commented: "'The history of San Felipe, Velasco, San Luis and Columbia (all on the Brazos River) shows that situation is no guarantee of future greatness. They were all well situated—their owners lacked enterprise. Compare Columbia to Houston! The one situated at the head of tide water on the largest river in the state, the center of the richest planting section of the world—Houston on a shallow Bayou, naturally incapable of navigation to any extent, surrounded by post oak, pine barrens and boggy prairies—one has all the advantage of situation, the other of an energetic people."

In 1899, Congress approved a plan to dredge the channel to 25 feet along its entire length, but it wasn't until 1910 that funds were appropriated to actually complete the job. On November 10, 1914, President Woodrow Wilson, in Washington, pressed a pearl-topped button that fired a cannon in Houston heralding the deep-channel era. Just six years later, work to deepen the channel began again, to 30 feet this time, and in the intervening years it has been dug ever deeper to accommodate ever larger ships.

While this improbable undertaking has been a spectacular success in commercial terms, its environmental consequences remain a matter of serious concern. It is not uncommon in Houston for two inches of rain to fall in an hour. When you add that runoff to the discharges of 354 industrial facilities and 168 municipal sewage plants, you end up with what we encountered in our runabout on the upper channel. But it isn't the health of the channel per se that conservationists worry most about; it's the impact of all that pollution on the bay into which the channel drains.

Galveston Bay accommodates more than a third of the sport fishing in Texas coastal waters, yields 13 million pounds of shellfish annually and hosts thousands of recreational boaters. It also provides prime habitat for marine wildlife; its estuarine marshes attract mil-

lions of birds and constitute crucial spawning grounds for fish and shellfish. Pollutants flushed down the channel cause widespread intermittent closings of shellfish beds in the bay, especially after heavy rains.

Paradoxically, while rainfall washes toxins into the bay, it also dilutes their impact and helps to mitigate the tendency of the channel to increase the bay's salinity. Galveston Bay is about ten feet deep and during dry periods, the channel allows excessive salt water to flow in from the Gulf, raising the bay's salinity and upsetting its estuarine balance. This makes the Texans' beloved oysters vulnerable to increased attack by the oyster drill, a predaceous saltwater marine snail. Some experts fear that a severe crisis for the bay may come during a sustained drought, when freshwater inflow will be severely curtailed and concentrations of both salt and pollutants will skyrocket.

In 1972, under pressure from the U.S. Environmental Protection Agency, Texas formulated tough new regulations intended to reduce or eliminate the discharge of untreated effluents into the channel. What transpired next is very interesting. Industry, singled out as the principal villain, took the new rules to heart, and industrial pollution has declined sharply. At the same time, however, municipal contamination has mushroomed as a result of the tremendous growth that has made Houston the fourth largest city in the nation. More than 13 percent of all the wastewater discharged in the state of Texas now goes into the channel. "So far, we've been extremely lucky," warns Frank Fisher, a biology professor at Rice University who has conducted studies on Galveston Bay. "The bay has a carrying capacity. We know that, but we haven't hit it yet, and we don't even know what it is. It's like walking on a razor blade. So far, we haven't been badly hurt, but it's an awfully dangerous way to manage an ecosystem."

One uncharacteristically chilly spring afternoon I joined two or three dozen other visitors to Houston for what must surely be the city's most peculiar tourist attraction: a guided tour of the upper ship channel aboard the Port Authority boat *Sam Houston.* We boarded at the Turning Basin and motored leisurely downstream past an international parade of ships: *Alicampos* and *Grace Boeing, Ciudad de Popayan* and *Inca Huyana Capac,* the *Khaipur* out of Karachi and the *Freeport Chief* from Monrovia. The home port for the freighter *Spirit of Texas,* lettered incongruously

Environmentalists worry about channel's impact on Galveston Bay, but fishermen, ships still share it.

across her stern, is Philadelphia, Pennsylvania. A bit further on we passed a long row of tumbledown warehouses. Lee Vela, the Port Authority spokesman who was my escort, told me that a Houston businessman planned to build a resort hotel and cruise-ship terminal there, from whence he would operate luxury liners to the Mexican coast. "Naturally," Vela conceded, "he'd have to redevelop the area some."

Naturally. Unlike many other cities, Houston has thus far made no attempt to capitalize on its waterfront by building parks or shopping malls there. What distinguishes the ship-channel area is not any salty, romantic evocation of the sea, but rather a no-nonsense and let's-get-on-with-business atmosphere. The neighborhood looks and feels like an industrial park with water running through it. I would not have picked it as a likely hotel site, but I'm not a Houstonian. If a Houstonian says he is going to berth cruise ships there, well then by God he probably will.

And that, finally, is why the ship channel is an ideal emblem for a city that wears its maverick style proudly on its chest. "It's a place where incongruities comfortably abound. As the *Sam Houston* eased along, we passed a flock of ducks dining on spilled grain at the towering Agri Export elevator. We passed the Houston Lighting & Power Company plant at Vince Bayou, where for a few years in the early 1970s, and for reasons no one can fully fathom, a school of tarpon wintered over in an unspeakably filthy backwater warmed by power-station outflow. "They'd just be rolling around there on the surface like they were playing," Wayne Crouch had marveled. And then they just as mysteriously disappeared.

A little later we passed my favorite incongruity of all. "Over on your right you'll see the Champion paper mill," the captain announced over the *Sam Houston*'s public-address system, "where they make high quality paper from good East Texas timber." And where, in the hulking shadow of the mill, an inconspicuous granite marker indicates the spot upon which the Mexican general Santa Anna was captured on April 22, 1836, a day after suffering a stunning and seemingly impossible defeat at the hands of Sam Houston's ragtag band of rebels. The battle is also commemorated by the much more impressive San Jacinto Monument, but here, surrounded by an industrial complex on the banks of what is surely one of the most audacious ship channels ever built—is the place where Texas was born.

The concern is that pollution and salinization may, under certain conditions, disturb bay's equilibrium.

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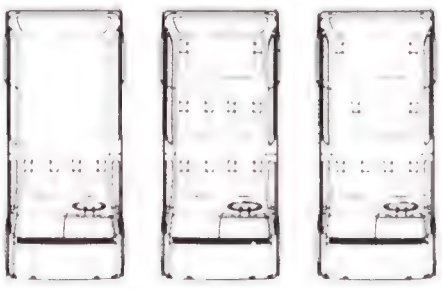

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By Bennett Schiff

Renoir's painting: the secret was light from inside

The works of the great Impressionist, now brought together in Boston, are those of a man who was determined to enjoy life

Sterling and Francine Clark Art Institute, Williamstown, Massachusetts

"I think it more or less captures those calf's eyes," Renoir said of this self-portrait (1899).

Once upon a time in 1874 when the world was purer, a group of young, and maligned, artists was making France the loveliest place on Earth in paintings of a brilliance that could not have been imagined before, except in nature itself. On a summer's day of that year Edouard Manet was painting Claude Monet's wife and son in the Monet garden in Argenteuil, a blossomy suburb of Paris in the Seine Valley, when another artist happened to drop in. For once he was without his knapsack of paints and brushes and canvas. So, he borrowed Monet's palette and brushes and casually proceeded to paint the scene, forever.

He was Pierre Auguste Renoir.

We are in the land and time of what had just been termed Impressionism—a hallowed, almost ritualistic, word now but one that was then hurled at its stubborn practitioners in derision. In time, society began to mend its ways as the pleasures of the paintings exerted their spell. But, until then, the going was tough.

When the great museums and collections of the world get together a showing of the work of the Impressionists, it is an occasion for celebration. Often enough the extraordinary becomes commonplace, and so it is possible to walk through a gallery of wonderful paintings without seeing them. But every now and then a special showing gives us a chance to experience the summation of a man's lifework and perhaps to reassess it or simply to become refreshed by it in a new way. The Renoir show which opened in London's Hayward Gallery, went on to the Grand Palais in Paris and is now installed in the Museum of Fine Arts, Boston, where it will be on view through January 5, 1986, is such a show. It is made up of about a hundred paintings representing Renoir's major periods and is the considered result of a collaboration of the Arts Council of Great Britain, the Réunion des musées nationaux in Paris, and the Boston museum. It is supported by a grant from IBM for all three showings.

Renoir was 33 in that year when he called on his lifelong friend Monet. It had been only a few months since he and Monet, along with Pissarro, Sisley, Degas, Cézanne, Berthe Morisot and a handful of other then radical painters had opened their own show in Paris, the one that gave Impressionism its name. It had been a vain attempt to get around the suffocating strictures of the official Academy of Fine Arts, which controlled the biennial Salons. These Salons presented to France, then the very center of the world of painting, what was considered to be the best, in essence the *only* painting of value being done at the time.

It is difficult to overestimate the importance to an artist of being accepted for a Salon showing. It was the one way of being seen by the critics, the art dealers and the rising middle class who bought paintings. To go against the granite establishment, to expose yourself

Musée d'Orsay (Galerie du Jeu de Paume), Paris

The swing (1876), tender of sentiment and image, offended some critics with its "violent" blue and flecks of sunlight like "spots of grease," but one of them thought it had the charm of a Watteau.

National Gallery of Art, Washington

Camille Monet and her son Jean in the garden at Argenteuil (1874) is both freer and fresher than Manet's version of the same subject. To do it, Renoir borrowed Monet's palette and brushes.

to the wit and merciless vituperation of the art journalists and by so doing virtually to exclude yourself from any possibility of a sale took courage and dedication to an idea. Some, like Manet, refused to go along. Some entered the Impressionist showings, but not regularly. In all, there were eight Impressionist shows between 1874 and 1886. Renoir entered four, carefully gauging his chances in the market, deciding at other times to enter the Salon competition in the hopes of finally breaking through.

He once explained his decision to enter a Salon competition to his dealer Paul Durand-Ruel, saying: "There are in Paris scarcely 15 art-lovers capable of liking a painting without Salon approval. There are 80,000 who won't buy an inch of canvas if the painter is not in the Salon. . . . Furthermore, I don't want to descend to the folly of thinking that anything is good or bad according to the place where it is hung. In a word, I don't want to waste my time in resentment against the Salon: I don't even want to give that impression. I believe one must do the best painting possible. That's all. Well, if I were accused of neglecting my art or, by idiotic ambition, of making sacrifices against my convictions, then I should understand the carpers. But since that doesn't come into the question, there is nothing to say against me. . . . My submitting to the Salon is entirely a business matter. In any case, it is like certain medicines: if it doesn't do any good, it doesn't do any harm."

To be an artist at that time was almost to follow a religious calling. It dominated every moment of your life, determined who your friends were, certainly your mistress, frequently your wife, where you spent your time and how, all of it directed to those hours spent alone with a brush, some tubes of expensive paint and a piece of stretched canvas.

Bennett Schiff is a member of SMITHSONIAN*'s Board of Editors. He wrote about the art of Vincent van Gogh in the October 1984 issue.*

Metropolitan Museum of Art, New York

Portrait of Madame Charpentier and her children (1878), the family of a publisher, brought Renoir to the attention of leading patrons. Proust described it in considerable detail in *The Past Recaptured.*

For Renoir it was life itself. From the time in his teens when he first dared to think of himself as possibly becoming an artist to his death at the age of 78, a crippled, shrunken, pain-ridden wraith of a man in a wheelchair, he tried to paint every day.

He had begun conventionally enough, in the tradition of artists of genius, or otherwise, by scribbling. This he did as a child with one of the tools of his father's trade, tailor's chalk, which he used to draw on the walls and floors of the combined apartment and workshop the Renoir family occupied in an ancient section of Paris within sight of the Louvre. The family had come from Limoges when Renoir was four, a poor family which traveled the 220 miles by stagecoach, a journey that took just over two weeks. Renoir's mother and sister would sleep in inns and he and his father and brother would sleep in the stable. Renoir was never to forget his early years as the child of a poor tradesman. Even in the days of his affluence and fame he would not pare his cheese but scraped the rind away. He didn't waste anything. As an art student he would pick up tubes of oil paints discarded by other students and try to squeeze out a last bit of paint. There were even times later on when, as a mature artist in his 30s, he couldn't afford to buy paint; couldn't pay the price of a stamp to write to a friend.

Renoir's father was annoyed at the disappearance of his marking chalk but had to admit that the sketches—portraits of his parents, his brothers, sister, the neighbors, dogs and cats—weren't at all bad. His mother agreed and bought Renoir a supply of exercise books and pencils. When he was 15 his formal days of schooling were over and he got a job with a firm of china decorators. His natural virtuosity was soon apparent and he went from pencil drawings of birds, flowers and the like to decorative paintings on various pieces of china and porcelain. In the evenings he attended free classes in drawing and he soon began to paint oil copies of the masters in the Louvre.

Factory-stamped china began to take over the mar-

Both: Musée d'Orsay (Galerie du Jeu de Paume), Paris

Dancers (1882-83): Girl in *Dance in the country* was Aline Charigot, who became Renoir's wife.

Dance in the city features Suzanne Valadon, later a painter herself and the mother of Maurice Utrillo.

ket. Customers found they liked the regularity of the mass-produced chinaware more than the hand-decorated ware. Renoir made a decisive move. He entered the studio of Charles Gleyre, which was part of the Ecole des Beaux-Arts. Among his fellow students were Monet, Alfred Sisley and Frédéric Bazille. The group soon met Cézanne and Camille Pissarro.

Renoir's days spent studying and copying at the Louvre had made him familiar with the work of Watteau, Boucher and Fragonard, elegant court painters of the 18th century. As a student he and his friends were impressed by the realist painter Gustave Courbet and with the outdoor landscape paintings of the Fontainebleau school, Corot, Daubigny and Diaz.

The young artists began going out into the Forest of Fontainebleau and the Seine valley, painting subjects they saw before them right on the spot. They lightened their palettes and began to discover that by breaking their brushstrokes up into little streaks and dabs they could come closer to the effects of nature, its hues and moods and vibrancy—how things really looked. The seeds of Impressionism as we know it today were sown in these years, in the mid 1860s.

In 1864, ten years before the first Impressionist show, Gleyre closed his studio and the painters, Renoir included, were out on the streets, trying to earn a liv-

Museum of Fine Arts, Boston

Dance at Bougival is not a companion piece, but the models are the same as in *Dance in the city*.

ing by painting. After all, they were professional artists now. Renoir had even had a painting accepted for the Salon of that year.

Out of the classroom, on their own so to speak, the painters stuck together—Renoir, Monet and Bazille, the talented painter whose life was cut short soon afterward in the Franco-Prussian War of 1870—living the lives romanticized by the novelist Henri Murger in *Scènes de la vie de bohème* and in turn by Puccini's opera *La Bohème*. They shared quarters, moved from one studio to another, painted portraits for a few francs, traded paintings for sacks of beans. And, they worked every day.

Although he was forced to write begging letters for money, one citing the fact that he was down to his last three francs, Renoir was a gay-hearted man, congenial in company, well liked and uncomplaining. He was also high keyed, finely tuned, erratic in his movements. At the time he had light brown hair, light brown eyes tending toward amber. He wore a mustache, later growing a fine long beard. He was about five-foot-ten in height, had delicate hands, a prominent aquiline nose.

By the late 1870s Renoir had managed to cultivate a circle of admirers who were powerful in the banking, business and publishing circles of Paris, people who liked paintings and who liked Renoir as well. Prominent among them was the publisher Georges Charpentier and his wife. Mme Charpentier was famous for her salon, the center of the intellectual and artistic life of Paris, and when Renoir's portrait of her and her children (p. 105) was given a central position at the Salon of 1879, he became a painter of importance. The great dealer Durand-Ruel began to buy his paintings regularly and there were steady patrons.

Most Parisian and most beloved

Renoir painted Paris in these years—shopgirls, milliners, seamstresses, the streets, the river, the air of the city. He painted the forests and fields of suburban Paris. He painted *Le Moulin de la Galette*, the outdoor dance scene on Montmartre, which may be one of the most Parisian paintings of any time, and he painted *Luncheon of the Boating Party*, which today is one of the most beloved paintings of the 19th century. He met Aline Charigot, recently arrived in Paris with her dressmaker mother, from the village of Essoyes in Champagne. Aline did his laundry, as she did Monet's. She stayed to become Renoir's model and the mother of their child, Pierre, who was five when they married in 1891. She was 20 when they met. Renoir was 38.

Meanwhile, Renoir traveled. He went to Algiers and, finally, made the mandatory trip to Italy to see the masters in their native land. He began to have doubts about the overall effect of Impressionism, began to think of the lessons of Ingres which stressed line over color, and he began to have doubts about his own painting. He had studied Raphael in Rome, Veronese and Tiepolo in Venice. From Naples, he wrote to Durand-Ruel: "I have been to see the Raphaels in Rome. They are wonderful and I should have seen them before. They are full of knowledge and wisdom. Unlike me, he did not seek the impossible. But they're beautiful. I prefer Ingres for oil painting. Yet the frescoes are admirable in simplicity and grandeur." He wasn't satisfied with his work. "I am still suffering," he wrote, "from experimenting. I'm not content and I am scraping off, still scraping off. I hope this craze

will have an end. . . . I am like a child in school. The white page must always be neatly written and bang!—a blot. I am still at the age of blots—and I'm forty."

He began to change his style. He used a drier and paler palette and he concentrated more on line than on color. It was a bold move but not very successful in the matter of sales. He had a grand reception in 1883 when his dealer Durand-Ruel gave him a showing of 70 paintings dating from 1874; it would have been easy to just go on in a way that both the critics and the public interested in art had at last come to admire. For some years, later in the '80s, he floundered, unsure of what he was after, doubting both what he had accomplished and what he was trying to realize. Finally, he returned to an Impressionism somewhat modified, in-

Yale University Art Gallery, New Haven

Montagne Sainte-Victoire (1888-89) is one of Cézanne's own subjects and shows his influence.

Renoir visited Cézanne in Aix-en-Provence often and wrote of how he loved the dazzling countryside.

Sterling and Francine Clark Art Institute, Williamstown, Massachusetts

Blonde bather I (1881), according to Renoir, was painted on a boat in the Bay of Naples, but the background should not be taken literally. The model is probably Aline, who was with him.

corporating his linear style but also related to his work of the '60s and '70s. This continued until his final phase, the monumental work of his last suffering and triumphal years, the representation of all he knew and all he wanted to say in the form of a series of nude paintings remarkable for their power and their overwhelming presence.

For the last 20 or so years of his life Renoir suffered from an almost unendurable form of rheumatoid arthritis. His hands had become claws. At the end, he did his paintings from a wheelchair. But he went on turning out masterpieces, which have been best described by art historian John Rewald in his indispensable book, *The History of Impressionism.*

"Like Cézanne," Rewald wrote, "Renoir achieved in his last years the synthesis of his lifelong experience. Impressionism lay far behind him; he retained merely the glistening texture of it, yet the shimmering surface of pigment he used now not to render atmospheric effects but to build with brilliant and strong colors an image of life in almost supernatural intensity. The study of nature no longer was his unique goal. 'How hard it is,' he explained to a young painter, 'to find exactly the point at which imitation of nature must cease in a picture. The painting must not smell of the model and yet one must be conscious of nature.'

"In attaining the balance between observation and vision, the aging Renoir created a new style, crowning his work by a series of masterpieces, exalted in color, subtle in rhythm, forceful in volumes, and rich in invention, progressing from canvas to canvas with fertile imagination and happy rendition."

It is in the book *Renoir, My Father,* by his son Jean, the great filmmaker, that you learn what those last years were like.

In the '90s, Renoir, suffering increasingly from his crippling arthritis, began to spend more and more time in the South of France near the town of Cagnes in Provence. In 1903 he built a house, Les Colettes, between Nice and Antibes.

Musée d'Orsay (Galerie du Jeu de Paume), Paris

Renoir intended *The bathers* (1918-19) to be his final achievement, summing up "the research of his whole life." It was almost his last painting; he died on December 3, 1919, of lung congestion.

ON MARCH 17TH A TORNADO DESTROYED THE KAMERLANDER HOME.

Tornadoes rip Venic

VENICE, Florida—A tornado smashed through residential areas of Venice at approximately 4:17 a.m. today. Local authorities estimate property damage at over ten million dollars. Numerous homes were completely destroyed, while many more sustained severe damage. Rescue workers were on the scene in the early morning darkness to provide aid and shelter for the victims of this area's worst natural disaster. The tornado-generated winds powerful enough [illegible] 4 boa[illegible] into a palm

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When a tornado hit Florida in March, Marv and Marion Kamerlander were fortunate to escape with their lives.

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It is here that Jean Renoir pictures him, a work of homage to his father: "What most struck outsiders at first meeting were his eyes and his hands. His eyes were light brown, bordering on amber; and they were sharp and penetrating. . . . As for their expression, they had a look of tenderness mixed with irony, of merriment and sensuousness. They always seemed to be laughing, perceiving the odd side of things. . . .

"His body became more and more petrified. His hands with the fingers curled inwards could no longer pick up anything. It has been said that his brush was fastened to his hand. That is not entirely accurate. The truth is that his skin had become so tender that contact with the wooden handle of the brush injured it. To avoid this difficulty he had a little piece of cloth inserted in the hollow of his hand. His twisted fingers gripped rather than held the brush. But until his last breath his arm remained as steady as that of a young man, and his eyesight as keen as ever. I can still see him applying a point of white, no larger than a pinhead, to his canvas to indicate a reflection in the eye of a model. Unhesitatingly, the brush started off like the shot of a good marksman, and hit the bull's eye."

He was so crippled he couldn't pick anything up. "I can't even scratch myself," he said. He could not wipe his nose himself.

Each morning he was carried in a sedan chair to the studio, a glassed-in shed about five yards square with window frames that could be opened to the daylight. "It was almost as if he were working out-of-doors," Jean Renoir wrote, "but, with the glass as a protection for his health, and it was possible to control the light by cotton curtains, which could be pulled and adjusted." He had partly given up the large indoor studio because its "cold and perfect" light annoyed him. He had a large easel equipped with rollers at top and bottom so he could have the canvas adjusted to just the area he could work on and with this contraption he managed to paint most of his last large canvases.

From the earliest works in the show to the final summations there is, somehow, a sense of liveliness present, a personality that breathes and that distinguishes his work. And, there is a sunlight, pearly opalescence, as if the light were caressing the canvas from underneath the surface. This is one aspect of Renoir's particular magic, light from inside—it glows upward. In the streets of Paris you could see walking Renoirs, young girls with faces like pouting peony buds.

A conversation overheard in the Grand Palais, from the midst of the cortege that wound its way through the exhibition, down long hallways, galleries, up stairwells, into other galleries:

"These paintings were shown in London before coming here and they are going to America afterward."

"Oh, what a pity, what a waste."

Renoir would have liked that. During a dark period of sales in France when Durand-Ruel had taken a collection of French paintings to New York, it was the Americans who bought and kept him afloat. "We perhaps owe it to the Americans that we did not die of hunger," Renoir told his son Jean.

"Renoir would try to imagine the pretty young blonde American girls," Jean Renoir wrote, "with bright complexions and sturdy legs, wearing sensible shoes that don't ruin the feet—'the kind of girls I like to paint.' And he would give an imitation of what he supposed was their American accent as they exclaimed over the pictures they saw: 'Ow! what a cute little red! Ow! what a dear little green!' "

Renoir painted a picture on the morning of his death. "He asked for his paintbox and brushes," Jean Renoir wrote, "and he painted the anemones which Nénette, our kindhearted maid, had gone out and gathered for him. For several hours he identified himself with these flowers, and forgot the pain."

Two people were in the room with him on the day he died, a cook and a nurse. One said his last words were: "I think I am beginning to understand something about it." The other thought he said, "Today I learned something." Either will do for Renoir.

He had told his son Jean that life beyond the grave didn't much interest him. "We'll see about that afterwards. As a dead man, I may be able to enjoy death. As long as I am still alive I intend to enjoy life." Which he did.

And left behind for us some paintings that are—well, heavenly.

Sumptuous *Geraniums and cats* (1881) was sold in New York, one of Renoir's first American sales.

Private collection, New York

OFFICE AUTOMATION: HOW MUCH IS TOO MUCH?

Sometime last year American business crossed a technological Rubicon. For the first time in our history, capital investment per office worker exceeded that per factory hand.

Like it or not, information has finally surpassed material goods as our basic resource.

Walter Wriston, ex-Citicorp chief, likens information to a new form of capital, one that is arguably "more critical to the future of the American economy than money capital."

Every day brings news of faster, smaller, more capable devices to serve the 70% of us who now work with this new form of capital.

But while the trend spotters on

continued on next page

continued from preceding page

their mountaintops cheer this "Second Industrial Revolution," the view from the front lines is not so rosy.

Too often, new devices are an uneasy fit with their sister machines of just a year ago. Too often, systems intended to simplify office life have the opposite effect. Grouses one manager: "The more business machines we buy, the more we seem to need."

Change is rampant. The stakes are high. Confusion is king.

RASCALS. The best way to make sense of all this technology may be to ignore the whole business for a week or so and think about how your office works instead.

Who uses what kind of information? Where does it come from? What do they do with it?

No company on earth has pockets so deep that it can afford to automate every aspect of its business. Some hard choices lie ahead.

Item: In a typical office, 75% of the salary dollars go to managers and professionals. The system that spares these expensive rascals from a morning meeting or an hour of returning phone calls may be a better investment than one that does a whole day's work for someone else.

Item: The lion's share of time spent in any office is spent *communicating:* listening, talking, chasing down stray facts, dealing with mail.

Were you to keep a log, you'd be appalled by how little time you have for actually producing "work." (Par for senior executives: about 15%.)

To leverage time, look for ways to *move* information more efficiently.

A desktop computer can perform in minutes the spreadsheet analyses that used to gobble hours. But how much is gained if the figures still walk from office to office in a mail cart?

Item: Streamlining the internal workings of your office may be less profitable than automating ties with customers or suppliers.

Japanese style "just in time" deliveries from suppliers are helping U.S. automakers slash inventory costs. Computerized flight information systems have given some airlines a strategic advantage with travel agents.

No company succeeds alone.

No company on earth has pockets so deep that it can afford to automate every aspect of its business. Some hard choices lie ahead.

BALANCE. Complicating the question of where your systems dollar is best spent is where you spent it last time out. And the time before that. A lot of past choices are coming back to haunt today's manager.

Reason: most of the systems clicking away in offices today were purchased a la carte – when phones were phones, computers were computers, and "office automation" meant word processing and copiers.

Now the walls between these separate technologies are tumbling down.

Some office telephone systems can now process data. Computers have evolved that can communicate.

It's dawning on customers and vendors alike that the future belongs to

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Today's customer must strike a balance between making the most of what's on hand and fighting like crazy to keep next year's options open.

the *integrated* business system.

Today's customer must strike a balance between making the most of what's on hand and fighting like crazy to keep next year's options open.

MISSING LINKS. Between today's a la carte systems and the office-wide, integrated everything of tomorrow is . . . what?

For many companies, the missing links are *networks.* By permitting different kinds of computers and other devices to share information, networks can pull today's stand-alone business machines into organized "islands" of automation.

Since these islands themselves can be networked together, users can widen the scope of automation in an organization pretty much at will.

Some companies have the backbone of an *office-wide* network already in place. Today's digital telephone switching systems (PBXs) convert speech into the same "bits" and "bytes" that computers use.

This means that many an existing telephone network can double as a highway for business data — and that "office automation" need have no geographic limits.

A plug for the home team: Every vendor does some things better than the other guys. While communications and data networks are drawing-board doodles in some shops, they are bread and butter items at AT&T.

It may be AT&T's greatest strength that we can integrate new and existing systems whether we provide *all* of those systems, or *some* of those systems, or the bridges between them.

SUCCESS. Like the first Industrial Revolution, this one will lift some companies and confound others.

Those without a coherent plan to manage information in *all* its forms — the spoken word, thoughts on paper, images, and computer data—will be at a disadvantage.

In the long run, your success with office automation will have less to do with whose machines you buy — or how many — than with how freely information travels among them. It is the relationships you set up *between* the machines, not the devices themselves, that will tell the tale.

P.S. Much of this message was drawn from *The Integration Puzzle,* a two-day seminar offered by AT&T's Institute for Communications and Information Management. For further information or for a catalogue of AT&T Seminars in eight cities, please telephone 1 800 247-1212.

Or write Mr. Dale Hegstrom, AT&T Information Systems, P.O. Box 1405, Morristown, NJ 07960-1405.

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The right choice.

Like a lighthouse in a lonely sea, one-room school punctuates Sand Hills of Cherry County, Nebraska.

By Mark M. Kindley

Little schools on the prairie still teach a big lesson

The one-room schoolhouse has advantages and disadvantages, but parents willingly pay more to keep 350 of them open in Nebraska

Here Kate Fullerton teaches four children in District 100 school. Stands of trees surround ranch houses.

"There are two things I don't like," he says. "One is language, another is spelling." He pauses deep in thought, rooting in the soft sand next to the back steps of the school while he considers the weight of responsibility thrust upon him. "I guess there's three things . . . reading. I don't like reading. Things I like are recess and lunch. Oh, and one other thing," says first-grader Bobby Vahrenkamp, "going home."

The idea of a one-room school doesn't make Bobby think of bygone days. It doesn't evoke a charming image of the good old days when life was somehow simpler. It looks like a lot of hard work to him.

Bobby's school, District 167, is 50 miles from the town of Valentine in Cherry County, Nebraska, the last ten miles on a narrow, seasonably unreliable sand road. The school looks like an outbuilding at a ranch and is big enough for only one room. You can spot it from a distance by the American flag flying above the Nebraska flag when school is in session.

I visited several one-room schools in Cherry County and I never did find yesteryear. None of the students I met considers himself or herself quaint. One-room schools in this part of the country could be called "appropriate technology." Several have computers. All have access to the most up-to-date audiovisual equipment and a county-wide library.

Endangered, but by no means extinct

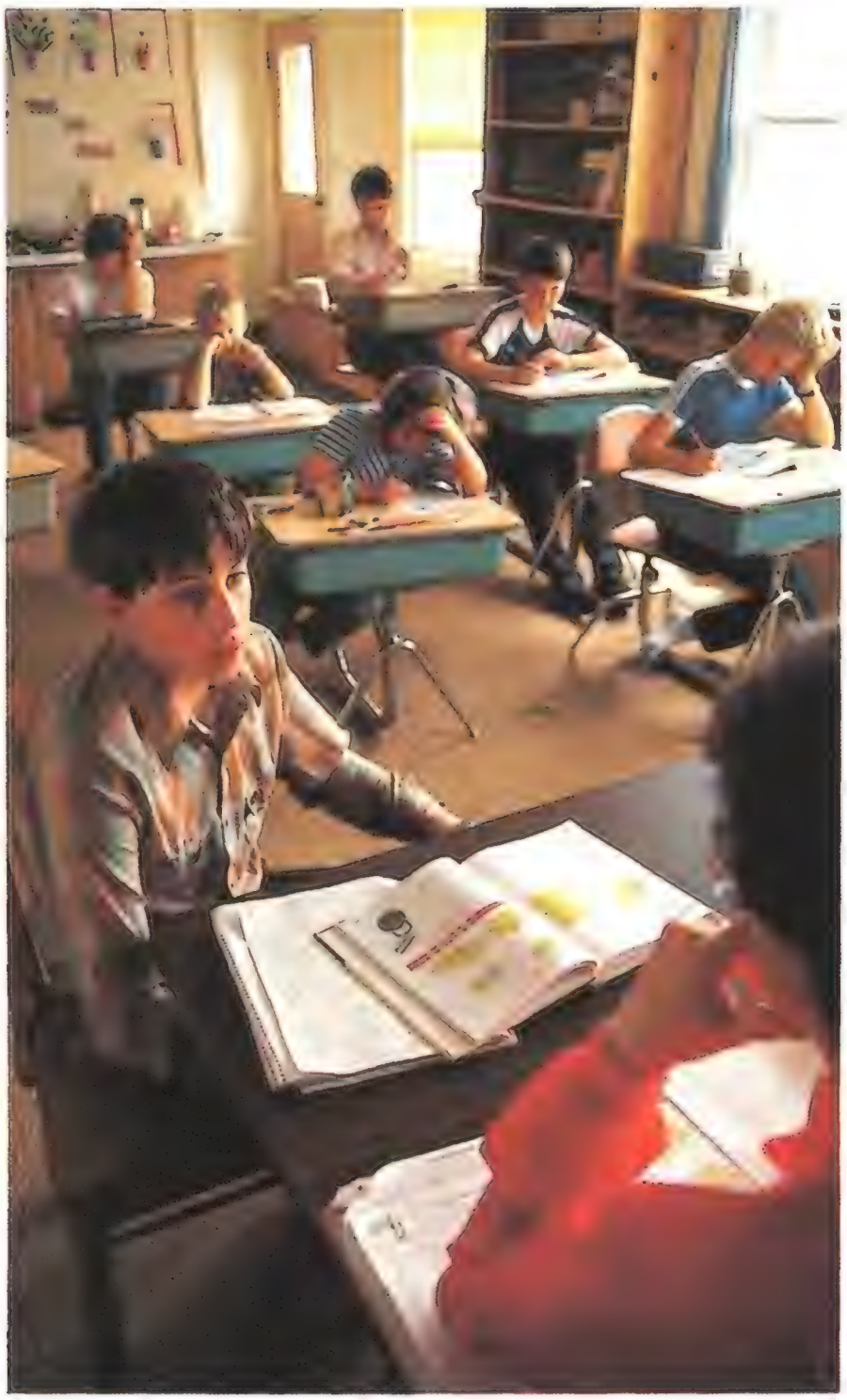
One-room schools are part of the heritage of the United States, and the mention of them, to those who don't have the benefit of Bobby's first-hand experience, makes people feel a vague longing for "the way things were." For the students and teachers who attend one-room schools, however, being remembered fondly is an uncomfortable irony. They face a variation of Mark Twain's famous remark. They are not memories yet. Reports of their demise are premature.

One-room schools *are* an endangered species, however. For more than a hundred years, one-room schools have been systematically shut down and their students sent away to centralized schools. As recently as 1930 there were 149,000 one-room schools in the United States. By 1950 their number had been reduced to 60,000. By 1960 there were 20,000. By 1970 there were 1,800. Of the nearly 800 remaining one-room schools, according to the National Center for Education Statistics, more than 350 are in Nebraska. The rest are scattered through South Dakota, California, Wyoming, North Dakota, Alaska, Washington, Vermont and a few other states that have on their road maps wide-open spaces between towns.

Now that there are hardly any left, educators are beginning to think that maybe there is something yet to be learned from one-room schools, something that served the pioneers that might serve as well today. Progressive educators have come up with progressive-sounding names like "peer-group teaching" and "multi-age grouping" for educational procedures that occur naturally in the one-room school. In a one-room school the children teach each other because the teacher is busy part of the time teaching someone else. A fourth-grader can work at a fifth-grade level in math and a third-grade level in English without the stigma associated with being left back or the pressures of being skipped ahead. A youngster with a learning disability can find his own level without being segregated from the other kids. In the more progressive suburban

Photographs by Bruce McAllister

One-room schools are very much alive



Sixth-grader Shayne Wolfenden discusses math with teacher Wanda Nielsen in District 167, Cherry County.

schools today, this is called "mainstreaming the handicapped." A few hours in the classroom and it becomes clear why so many parents feel that one of the advantages of living in Cherry County, Nebraska, is that your children have to go to a one-room school.

Teacher Wanda Nielsen calls the students to her desk one at a time. It's Bobby's turn. He is fidgeting, sitting with one leg folded under him on the oak chair across the table from Mrs. Nielsen, cradling his head in an agony of concentration. Mrs. Nielsen sits with her index finger over her mouth as if she is barely containing a smile. She has four children of her own. They attend District 5, a two-room, two-teacher school about three miles away.

Having only seven students sounds like an easy assignment for the teacher until you think about the preparation necessary to teach seven courses to each one each day. Mrs. Nielsen progresses through the day with the indomitable determination of an endurance swimmer swimming upstream. She is always being interrupted, yet the schedule never is. She answers countless questions, settles all disputes, arm wrestles with Bobby's attention and somehow always manages to keep moving ahead through the lessons. The kids help, the older ones teaching the younger ones about arithmetic or reading, the younger ones teaching the older ones about patience.

While Bobby struggles at the front desk, fourth-grader Jess Ravenscroft carries his workbook over to Jimmy Wolfenden's desk and plops it down unceremoniously on top of Jimmy's book. Jimmy is in eighth grade. He knows the answer to Jess' questions, but he's also learned a few things about teaching. He points out what Jess needs to read to find the answer for himself.

"You're no help," Jess complains in a whisper, dragging his book back to his own desk.

"I'm not supposed to give you the answers," Jimmy whispers back.

Off to boarding school 200 miles away

He should know. All his school days have been spent in this one room. He has been driving himself and his brother and sister to school (on back roads that cut across his parents' and neighbors' ranches) since he was nine. Tammy, now in seventh grade, and Shayne, in sixth, will share the driving next year when Jimmy will begin high school at a boarding school in Central City, Nebraska, 200 miles away.

Graduation from elementary school here usually means moving away from home. Many students like Jimmy will go to boarding schools around the state. Others will board with relatives in Valentine so they can attend high school there, returning home on weekends. Often, mothers of ninth graders will take apart-

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Third-grader Ryan Ravenscroft, left, and his brother Jess work on an assignment in Mrs. Nielsen's school.

ments in Valentine to be with their sons or daughters. Commuting every day to school is impossible, especially in the winter, when blizzards sweep down from Canada, and in the spring, when the roads turn to quicksand. The one-room schools in this part of the country make it possible for families to stay together at least through eighth grade. If District 167 were closed, Bobby and his classmates would have to leave home to go to elementary school.

Cherry County is larger than Connecticut and has fewer than 7,000 residents. Valentine, the county seat, has about 2,500. The next largest town, Wood Lake, has around 250. There is one section in Cherry County as large as Delaware where there are no towns of any size at all.

All that open space stands between the people here and the world outside. It isolates and, in certain ways, protects them. Ranch families don't have some of the advantages that city dwellers like to boast about. They don't have a symphony orchestra or an art museum. But they don't have some of the disadvantages of city life, either. There is no poverty here. You either own a ranch, work on a ranch or you move to town. A drug dealer couldn't do enough volume here to justify the drive from the nearest city.

The students do well. Nebraska, with the greatest number of one-room schools, ranks fourth on standardized achievement tests compared with other states. The high school in Valentine, which draws about a quarter of its students from one-room schools, ranks above average within Nebraska. Each year almost 70 percent of its graduates go to college. The teachers in one- or two-room schools have the same prerequisites as the town teachers, although they are paid less. All the students have the same textbooks and curriculum, provided through the foresight of the Sawyer Memorial Library, set up in 1939 to standardize education in the county. There is a bookmobile that makes the rounds of all the schools regularly. The Education Services Unit in Valentine makes audiovisual equipment available to schools whenever they need it.

"Basically, we're like one big school here, with a lot of space between the classrooms," says County Superintendent John Carr. "I don't think you could find a better education unless you went back to Plato and Socrates and the days when you had tutors." Carr is a big man in his mid-50s. He looks a little like a bear in a terry-cloth shirt. "I'm an old football coach," he says. "I should say I'm an ex-football coach." Carr likes to be described as cantankerous. He describes himself as bullheaded, a personality trait that gets exercised in his job.

"It's damned inconvenient to educate your kids here," Carr says. "You can't take anything for granted. You have to see to it all yourself. For that reason, I think, people here care a lot about education. They care about it because they pay attention to it. They have to."

Grass-covered dunes a Shangri-la for cattle

Cherry County is in the heart of the Sand Hills, 19,000 square miles of grass-covered sand dunes formed 7,000 to 1,500 years ago by winds blowing over the beds of dead rivers. The Sand Hills have been compared to the Great Eastern Erg of the north central Sahara—except for the water. There is an estimated half-billion acre-feet of water stored beneath the dunes. More than 1,600 small lakes are scattered throughout the region. A number of rivers, including the North and Middle Loup and the Niobrara, drain the Sand Hills.

Ranchers used to avoid the hills until the late 1870s when a group of cowboys ventured into the dread "choppies"—trackless areas of low dunes—after some lost stock that had strayed into them. The cowboys expected to find little more than bleached bones and blowing sand. What they found were herds of cattle that had been wandering into the hills for years. The cattle had clearly prospered on the high-protein grass that covers the hills and had, no doubt, enjoyed the absence, until then, of cowboys. Since then this has always been ranchland. Ranches range from a few thousand acres to 60,000 acres or more. It takes as

Mark M. Kindley has written for SMITHSONIAN *about kites and meson-beam cancer therapy. He reports his mother attended a one-room school in Vermont.*

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School's out, pupils run for the van—equipped with CB radio—Kate Fullerton uses to drive them home.

Fullerton quizzes Jessica Bush, Jarrod Crouse and James Nelson on a mystery story they are to unravel.

much as 20 acres to support one cow and calf for a year, so there can be no small ranches here. You have to be big to survive.

The Sand Hills are beautiful, open country with rolling hills and tree-lined rivers. The sunsets alone are worth the 130-mile drive up from the nearest airport in North Platte. People don't live here just because it is a long way from town. Superhighways, microwave dishes, feeder airlines, computer modems, the wing plow and four-wheel-drive station wagons have made the distance between rural America and urban America more a matter of choice than geography.

Kate Fullerton looks like a pioneer woman. She has the kind of commonsense, unflappable nature that won the West. But there are a few telltale hints of her Eastern upbringing. She wears scrimshaw earrings and she talks too fast to be a Cherry County native. Kate was born and raised in New Bedford, Massachusetts. She came to Cherry County as a student teacher expecting to have an adventure out West before settling down in the suburbs back East. While she was here she met Jerry Joe Fullerton—"he looked very Eastern the first time I saw him"—married him and now returns to New Bedford only for Christmas and special occasions.

Kate's seen the city, but she's chosen the country. She teaches in District 100, a one-room school about 15 miles from Valentine. "I like it here," she says. "I like being a teacher in a one-room school. I like driving the bus, doing the cooking, being the janitor. Everything. I like having responsibility for the whole shebang."

What Kate doesn't volunteer about her drive in the morning is that it's in the wrong direction. Kate lives in the small town of Cody and drives the bus through Valentine on school mornings, picking up her students on the way *out* of town. Some might say that the children could as easily travel in the other direction and go to elementary school *in* town. Kate and her four pupils hope they won't.

Most of the one-room schools in the United States are in extremely remote areas where there are no other schools within commuting distance. Schools like Kate's that are within commuting distance of centralized schools exist in a kind of no-man's-land between cultures. The students, parents and teachers who support them have a choice. They can have the elementary school in town with the gymnasium, the marching band and enough youngsters to field a baseball team without having to eliminate bases. But they prefer the one-room school. Unfortunately, in most cases the one-room school is not a choice they get to make. They live constantly under the threat of closure and worry all the time about the fate of their schools.

Tacitly accepting that people in cities have more authority than people who live in the country—whether it's true or not—defenders of one-room schools try not to call attention to themselves almost as a matter of policy, although it's not very effective. County Superintendent Mary Lee Timperley of Stanton County, Nebraska, says many teachers in one-room schools delay asking for much-needed repairs for fear

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that their requests will be used as an excuse to close down the schools altogether. "Rural schools," she says, "are treated as though they are always about to be phased out."

Those who want to close one-room schools used to say that rural students were disadvantaged and consolidation was for their own good. Students from one-room schools do as well or better on standardized tests than those from larger schools, however, thereby disarming the "disadvantaged" argument. The argument for consolidation now is that one-room schools are too expensive, a distinctly less generous motivation, although perhaps a more persuasive one.

At a one-room school I visited in Belvidere Center, Vermont, the equivalent cost per student (there were 24) was $3,200 a year. The national average is just over $2,900 per child and some school districts near Belvidere Center hold their schools to a penurious $1,700.

Marilyn Graham lines up with three-quarters of her student body: Joe Sears, Adam Weber and Travis Sears.

By itself, the cost discrepancy is not an insurmountable problem. The taxpayers in Belvidere Center pay the additional cost because they have decided it's money well spent.

"Studies show that small schools exist where people can afford them," says Faith Dunne, Associate Professor of Education at Dartmouth College in Hanover, New Hampshire. Dunne has conducted a comprehensive survey of small rural schools in America. "Where there is a choice," Dunne says, "people choose to keep the small schools."

More often than not the question of cost is so tangled up with the struggle of wills between urban and rural cultures that negotiating equitable financing is problematical. There is a sense among parents in Cherry County, for example, that if they give the state government in Lincoln credit for even one good idea, they'll be letting the coyote in to guard the cattle. "They may say they don't want to close our schools now," one parent told me. "But what about five years from now? It will be a whole different bunch of bureaucrats. What will they be saying then?"

Who has the power to close the schools?

By law, in Nebraska, one-room schools can be closed only by a vote of the electors within the school district. "A bureaucrat, an appointed official such as myself," says Nebraska Commissioner of Education Joseph E. Lutjeharms, "has absolutely no power to go out and close down schools." But laws don't reassure the parents of children in one-room schools here. Laws, after all, are made in cities. There is a sense—not just confined to parents of kids in one-room schools—that schools are not controlled by parents, that there are people with more authority than parents, students or teachers. They are "administrators" and "policymakers."

"Much education policy is about making education systems more convenient for administrators and policymakers," says Jonathan P. Sher, formerly Assistant Dean of Education at North Carolina State University in Raleigh and now president of his own consulting firm. "I'm not saying there is a cabal, a conspiracy of heartless bad guys sitting around asking: 'How can we do away with rural schools?' The forces are in place and they have so much momentum you don't need a conspiracy to keep things going along as they have. A conspiracy is necessary to divert them from their course. We need to have people sitting up conspiring late at night to *help* rural schools."

As more one-room schools are closed, it's getting harder to see what's being lost and easier to lose it. For those who are closing them, nostalgia, like some seductive narcotic, makes it almost painless, almost inevitable. But others see the one-room school as a sym-

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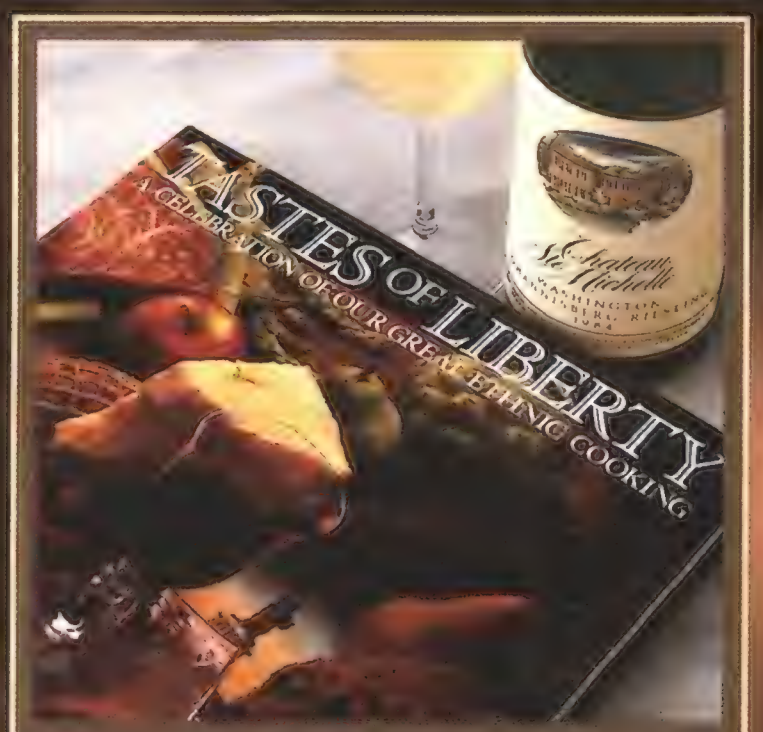

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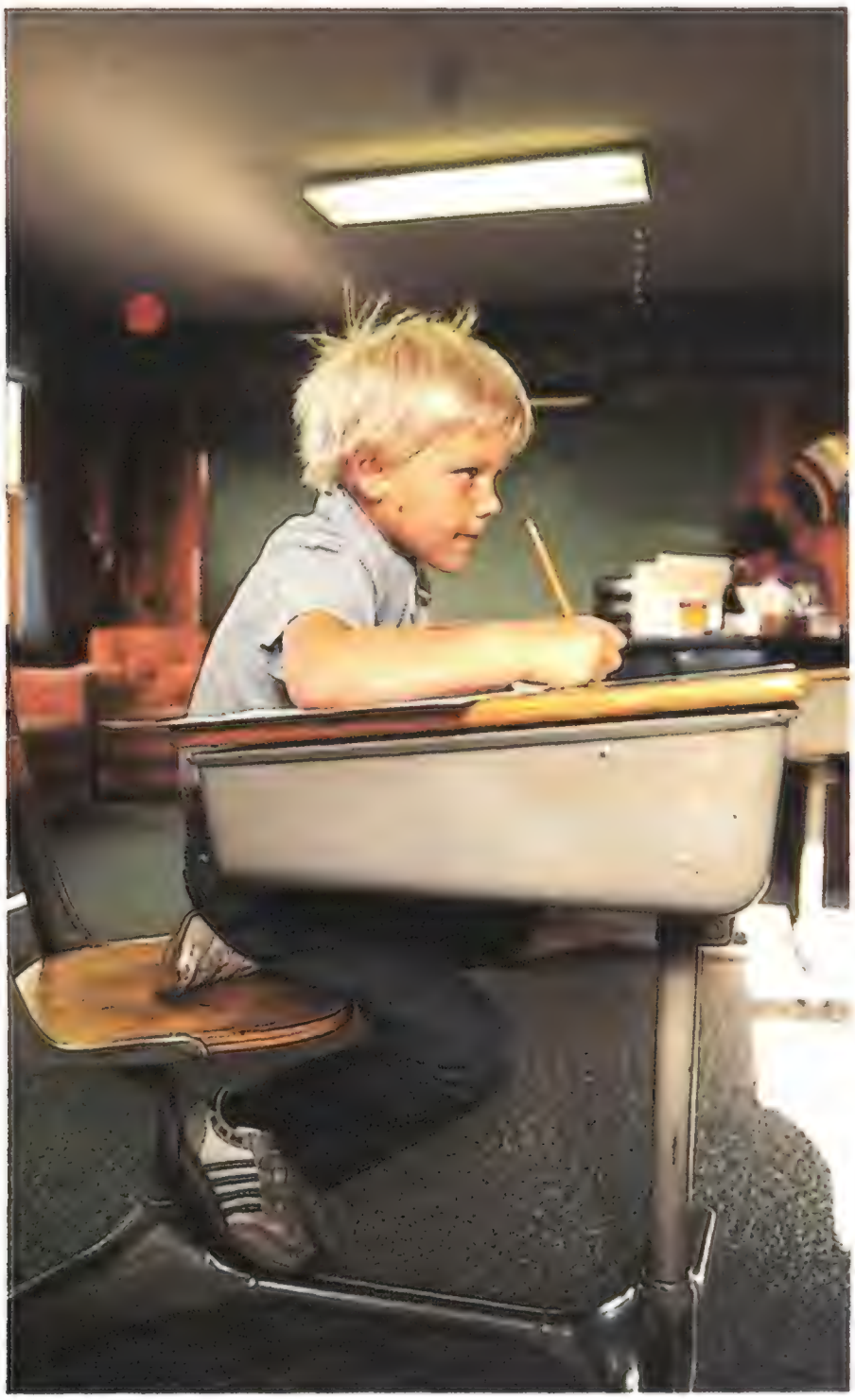

Adam Weber, a first-grader, is all concentration during a morning math session at Kennedy School.

bol of what's good about rural life. It was the place where rural culture was forged; without it they fear their culture will vanish like an early morning dream.

Teacher Marilyn Graham at District 31 in Cherry County is from Lodgepole, Nebraska, a small farming community in the western part of the state. This is her first year at this school, her third year in Cherry County. She went to Chadron State College where she met her husband John (Neil) Graham at a rodeo. Neil teaches grades six, seven and eight at the middle school in Valentine. Altogether he has almost 150 students in his classes. Marilyn teaches kindergarten through eighth grade. She has four students.

Marilyn makes the rounds of her pupils' desks as they work. The sound of typing comes from a back room where eighth-grader Travis Sears taps away hesitatingly. Travis is also studying the food groups and, as part of that lesson, he is preparing tacos for everyone.

I recognize the same uninterruptible pace here as in District 167. A kind of group imperative seems to hold each youngster to his or her lessons. There is no anonymity to skulk away to in a school that is little bigger than a fair-sized living room. But it's not just the diminutive size of the school that should get the credit. These are children who have been doing chores as long as they can remember. They learn discipline on the ranch and they practice it in school. All the students are working ahead of their grade level, Marilyn says. Second-grader Joe Sears, Travis' younger brother, for example, is doing double-digit multiplication which is usually introduced in fourth grade.

Kindergartner Jill Fleming, a miniature Goldie Hawn, is making an illustrated dictionary and, in the process, getting to know glue. Adam Weber, in the first grade, has the desk next to her. His best subject appears to be talking. Among other topics, Adam talks about his younger brother, Andy. "Wait until Andy gets here," Adam warns. "He's a real stinko."

There is no language lab here. No band, no baseball stadium, no hot water. But there are a few things here that larger schools don't have. When Marilyn works with the children individually, they sit together on the couch under the windows where the afternoon light comes in behind them. Travis cleans up after his culinary exercise with the food groups (brother Joe described the tacos as "yucky" and then had seconds and thirds). Adam continues his nonstop monologue. And occasionally, wherever she happens to be at the time, Jill bursts out singing. Outside is the wind and a gray Nebraska sky.

Rolling library runs obstacle course on the way to its biweekly stop at one-room school in Nebraska hills.

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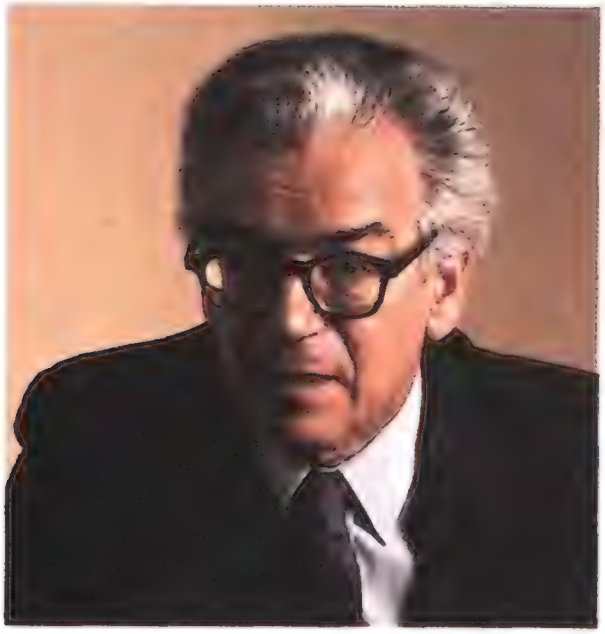

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By Dora Jane Hamblin

Make-believe can be good business in Milan and Rome

Creating fantasy and illusion for opera, theater, film and TV is stock-in-trade for the 125-year-old firm of E. Rancati & Co.

Amid props, Rancati's great-nephew Giuseppe Sormani and family gather round founder's bust.

Who among us—own up!—doesn't quiver to the sound of a pit orchestra crashing into the latest Broadway musical? Or curtain-up on *King Lear*? Who doesn't get a catch in the throat when the overture of *La Traviata* resounds not only in the plush red-and-gold hall but also in the labyrinths of memory?

Show biz has us hooked, and most often we love it. Nobody loves it more than a fourth-generation family firm in Italy that may be the oldest theatrical property house in the world. Founded in 1860, it has flourished through wars and depressions, providing illusion in the form of Yorick's skull, Otello's bed, Cleopatra's throne, Turandot's headgear, Aida's chariots and standards, and enough swords, helmets and breastplates to arm the Crusades.

It's a modest enough firm, financially, to have escaped the notice of those who do research for international financiers, but E. Rancati & Co. is famous the length and breadth of Italy as provider of everything from furniture to fake fruit. It certainly is highly regarded at Chicago's Lyric Opera, at the BBC, in Paris and Berlin and Greece and Yugoslavia, and in fact just about everywhere east of Hollywood where anyone is creating an epic.

It all began with a moderately successful sculptor named Edoardo Rancati, in Milan, 125 years ago. By 1860 the great Teatro alla Scala, the famed opera house that saw the world premières of *Norma*, *Otello*, *Falstaff* and *Turandot*, among others, was almost a century old. Rancati conceived the idea of creating for it all the props it needed and then renting them out. This would save the opera house the trouble and expense of storing, maintaining or recommissioning what it needed. La Scala liked the idea and so, later, did the other opera houses around Italy, theaters, and then inevitably cinema and TV.

In the early days, scenographers and/or directors often done up in top hats and impeccable gloves, would go off to speak to Maestro Rancati, carrying under their arms or in portfolios meticulous handwritten lists of all the ornate goblets, gilt chairs, thrones, chests of drawers, chandeliers, umbrellas, books, paintings, royal beds, wardrobes and so on that were needed for each production. In the margin of those early lists, still preserved in the archives of Rancati in Milan, the scenographer or his assistant sketched in exquisite detail, usually in watercolor, the precise shape and design required.

Rancati's firm reproduced them faithfully in wood, leather, iron, fabric, wax or papier-mâché, which the Italians call *cartapesta*. Well before performance time, a crew from Rancati wheeled wooden carts through the streets of Milan to deliver their goods. One of them, a foreman, always remained for dress rehearsal to make sure all was well, and throughout the season a

Artist's drawings inspired Rancati masks for 1924 première of Boito's *Nerone*; Toscanini conducted.

Photographs by Francesco Ruggeri

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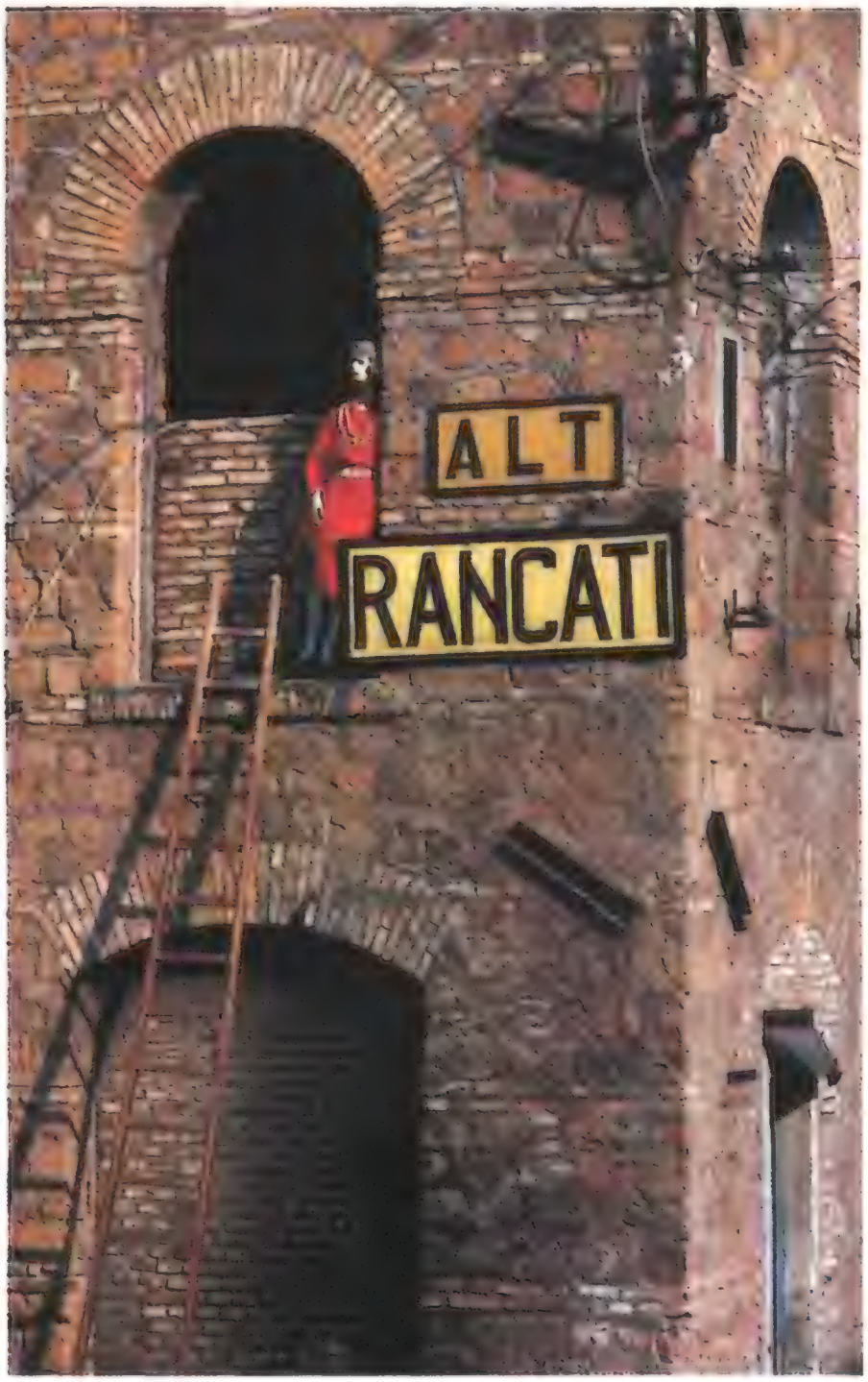

Chic dummy, perched aloft on Rome warehouse ledge by a prankster, coolly looks out over the courtyard.

Roman centurions' helmets have appeared in several films; here, one bedecks Rome's Angelo Sormani.

man was there to provide another champagne glass for a crucial scene, or to mend a suddenly disintegrated gilt chair on the spot.

Edoardo Rancati was so taken with his new profession that he almost gave up sculpture. He married Giulia Sormani, daughter of an old friend, and when he died, in stepped Giulia's brother Giuseppe, who bought the business. A nephew, Romolo, joined up to help run it. Thus E. Rancati & Co. has been for a century a Sormani operation, but they have maintained the original name out of loyalty, pride and what Italians call *passione*. This word to non-Italians conjures up an image of heavy breathing through flared nostrils, but that isn't what Italians mean. They mean dedication, fidelity, the love of making it right.

Romoletto to the rescue

Giuseppe Sormani was an expert cabinetmaker who personally built or supervised construction of the imitation antique furniture, lamps, thrones and beds, some of which are still stored scrupulously in the Milan warehouse and would no doubt fetch a fine price at an antique show.

Despite all his skill, it was his nephew Romolo who became the company pride and joy. So small that even his admirers called him "Romoletto," he arranged an exclusive contract with La Scala, set up branch offices in Rome, Turin, Bologna, Palermo, and made himself an expert on period styles and furniture. It was Romoletto, also, who saved the company in its worst hour. World War I caused only minor dislocation in the world of grand opera and theater, and between wars E. Rancati & Co. provided props for at least 300 productions a year in Italy alone. Even Mussolini didn't disrupt them too much, but World War II certainly did. In the middle of August 1943, Milan was bombed into smoking ruin.

Rancati's warehouses took direct hits, La Scala was badly damaged, acres of industry lay in ruin. On the morning of August 20 a man named Nicola Benois, who had been for more than a decade the principal scenographer for La Scala, sat down and wrote an anguished letter to the Sormanis: "When I heard of the tragic end of your famous institution, I felt a sadness as if I had lost my dearest relative. Is it possible that Rancati, this museum and this depository of the art of theatrical provision, with all its formidable heritage, unique in the world, could be destroyed?" He rushed to the scene after the bombs, he wrote, hoping for the best but found "only empty walls, still smoking, and a horrifying heap of ruins."

But Romoletto, it turned out, had headed off the worst. He had shipped off 11 cartloads of the most precious props of La Scala (*Otello, Aida, Falstaff,*

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Rancati artisans exhibit their skills: World War II European pistols made of aluminum will be painted; sword parts, based on authentic design, are assembled; a *cartapesta* mask is freed carefully from its mold.

Turandot) to the little town of Rovellasca near Como. His son Giuseppe, then a teenager, now head of the Milan office, can hardly suppress a giggle as he recalls the crazy juxtaposition of treasure in wartime: "All over the altar of the main church of Rovellasca were the idols of *Aida*." Romoletto had also providentially sent the archives of the company to Rome, which he calculated the Allies wouldn't bomb, and had them hidden somewhere near the Campo Marzio.

Thanks to him they survive, several shelves of neat storage boxes marked by opera and by year. Tucked away inside are those old lists of properties, with sketches, along with the alterations of modern scenographers and directors. "More than a century of operatic design stands here," say the Sormanis. In the bombed-out depository in Milan almost nothing remained except heaps of metal swords, shields, standards. Many are still there in the new warehouse, stacked rusty on shelves, waiting to be restored should anybody be willing to pay.

For some time Rancati functioned out of temporary headquarters, but as the war-dust settled, it became clear that both Rome and Milan should move and expand. Romolo's three children divided the territory:

When interviewing the Sormanis, the author learned that from Rancati come artifacts used in her village's annual Ferragosto *celebration.*

elder son Angelo went off to Rome to serve what was becoming "Hollywood on the Tiber," Giuseppe and Anna remained in Milan, went to the periphery and continued to work primarily with opera and theater. So it remains. The other offices are closed because transport is more efficient these days and regional opera houses have shorter seasons.

In each of the enormous depositories in Rome and Milan there are so many objects, of such variety, that the mind of a simple visitor boggles. A guillotine? We have it. About 4,000 belts (belts, for heaven's sake?) ranging from Greek to Roman to GI and SS to modern carabiniere. No problem. An Etruscan ossuary, a street sign from the Nazi occupation, an ivory throne from *Boris Godunov*? Sure.

In Milan there is framed on the wall a small reminder, in Italian, that there is "A place for everything, and everything in its place."

But which place? The visitor's next question is an overwhelmed "How do you know? Is there a list? How many objects are here?"

"We don't know," reply Angelo Sormani in Rome and Giuseppe Sormani in Milan.

"A million, maybe?"

"We don't know."

"But you have a list, a control. Maybe a computer?"

"The computer is here," they respond, individually, days and miles apart. "The computer is here . . ." tap-

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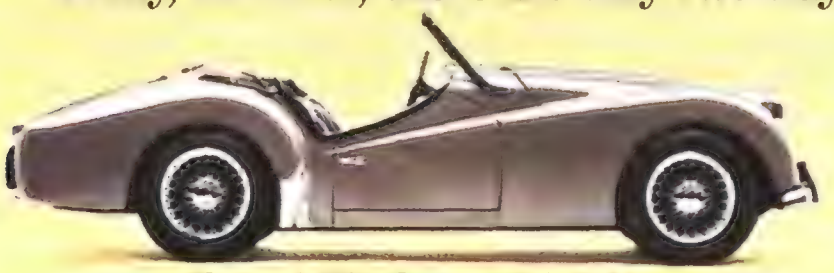

Triumph TR3. Last made in 1963.

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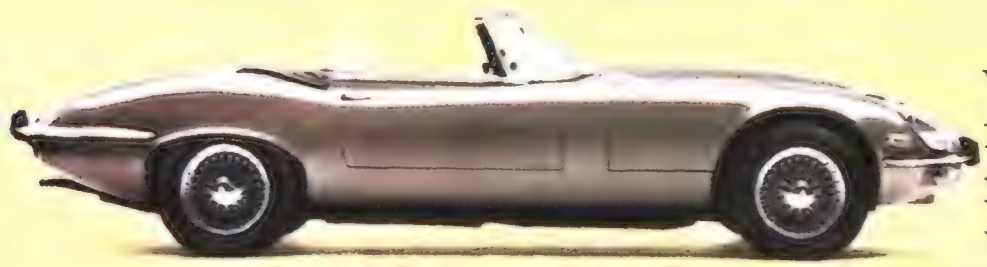

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Creating fantasy and illusion

Cartapesta Madonnas, made for a surrealist film's church sanctuary, may be resurrected for future use.

ping their balding heads and smiling beatific smiles.

On the evidence they are correct. Walking through the Rome warehouse Angelo Sormani points lovingly to a leather breastplate and says "Tyrone Power wore that, I can't remember the film. Oh, and see this armor? Faye Dunaway wore it in the television *Christopher Columbus*. It is very light, it fitted her perfectly. Oh, here is Liz Taylor's throne in *Cleopatra*. And those crazy umbrellas for *Casanova*."

In Milan brother Giuseppe lightly touches a gilt chair and says "My grandfather made that for *La Traviata*. It would cost at least $500 to make one today. Here, this ice cream vendor's cart, that was for Zeffirelli. This we made for Menotti. Here is a chest for *Madama Butterfly*. It's quite an old one, we have made six or seven since; designers' ideas change. . . ."

In both of the warehouses there is a rough order: the "belt room," the "helmet room," the furniture. In Milan they try, because opera is more stable there, to store *Aida* in one place, *Tosca* in another, and to separate the props by historic period.

Today's staffs are smaller because it has become more convenient and economically viable to farm out work to independent artisans, and to buy simple props from small firms that produce, say, fake fruit and vegetables. Rome and Milan each maintain a permanent staff of about ten who check items in and out, make minor repairs and deal with the customers.

Plastic has replaced metal and leather for such things as breastplates and shields—and sometimes furniture. Once, workmen laboriously hammered or tooled, or sawed and glued. Now these items are shaped and pressed over forms and painted to look real. On the walls of the Milan warehouse hang hundreds of wooden forms from the old days, once made as carefully as the forms for violins or violas. These Rancati forms include stringed instruments but also swords, human and animal masks, drums, standards. They exist to insure that the shape, if not the material, remains true to its period.

In the rain, real bronze

Oddly enough, the media most of us conceive to be the most false—cinema and TV—are for Rancati the most precise. "In theater," they explain, "one remains at a distance. A helmet, a sword, a chair, can be rubber or aluminum or plastic. The dimensions are a bit different—bones for *Mefistofele*, for example, must be bigger than life-size because they look so small on the stage. But there is still in opera, in theater, more room for illusion, for fantasy. In cinema or television, because of the close-ups, the material must be as real as possible. If a man uses a helmet in a film, and they shoot in the rain, the helmet must be real bronze."

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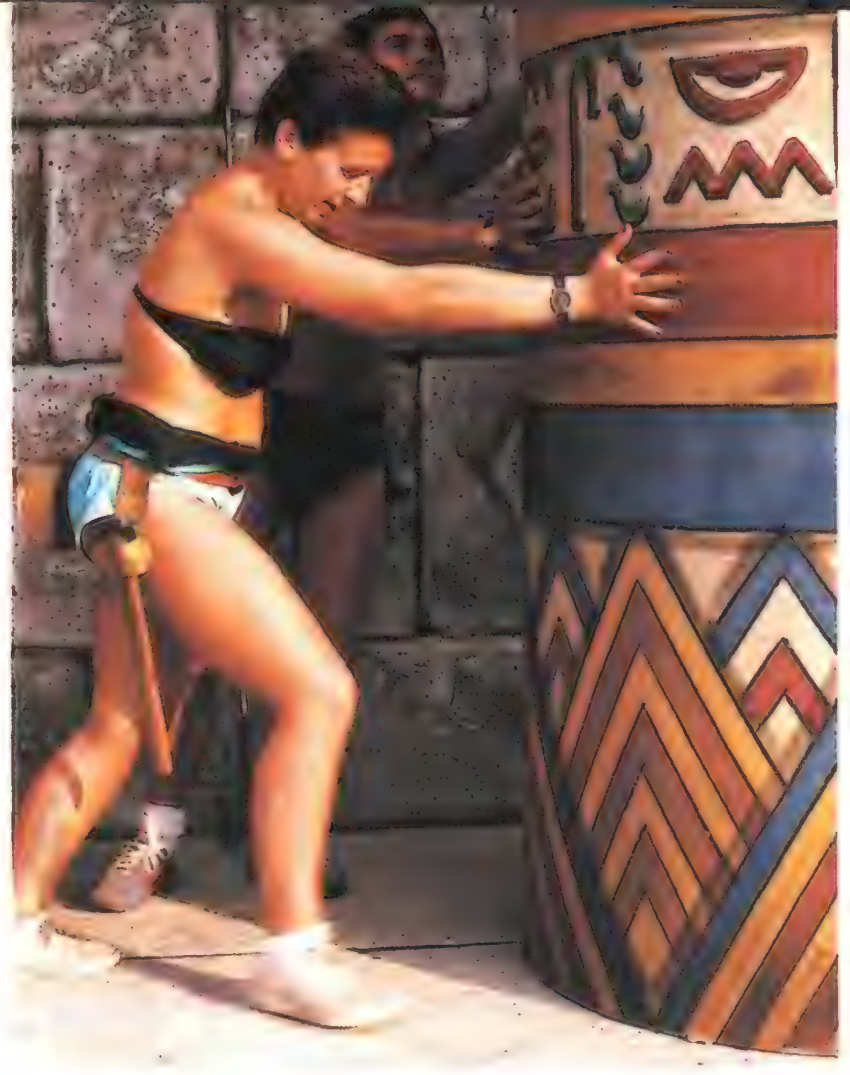
Druid trumpets for La Scala production of Bellini's *Norma*, larger than life, are visible from gallery.



Setting up for last summer's *Aida*, grips at Verona's Arena maneuver an Egyptian column from Rancati.

Even here, however, there can be further illusion. The brothers Sormani reveal that often the stunt man or the stand-in carries the heavy metal; the star wears or wields plastic.

Dreams of a permanent "Hollywood on the Tiber" arose following World War II, fueled by the international success of Italian films and the expensive epics made in Italy by American producers taking advantage of surplus frozen currency and low production costs. The decline and fall, engendered by diminishing funds and escalating costs, has damaged Rancati's fortunes as little as did the wars. Television spectaculars helped fill the gap, and so did the general move to film epics elsewhere abroad. Before a U.S. company, or a British one, or an Italian film crew heads for Greece or Tunisia or Yugoslavia, it calls Rancati.

One of the secrets of the firm is that it never throws anything away. All is reusable. "A cart, a standard, a throne, a bed . . . we can alter the period," says Angelo in Rome. "We can change a Roman standard into a Fascist one with a touch of paint." Props made for a TV spectacular on Masada were redesigned for Cleopatra or vice versa; the brothers are not politically inclined. Helmets for Franco Zeffirelli's *Jesus of Nazareth* were eminently reusable for Italian TV's recent *Quo Vadis*. An American epic on *Helen of Troy* left behind hundreds of artifacts that are being studied with beady eyes now because of a rumored series on the Crusades.

The brothers Sormani watch for sales when old estates are broken up, to buy genuine articles that would be difficult or impossible or too expensive to reproduce. Velour suitcases, for example, or 1880 coffee grinders. Really fine furniture or fittings they do not buy because "our things must be shipped around, used on stage or on set, and all are damaged, inevitably." Right now, however, they have their eyes peeled for some old horse-drawn carts and some 1910-14 tramcars. "People, and communities, throw away things which can never be reproduced. To us, they are priceless."

About ten percent of their total stock is always out on location. Neither Rome nor Milan has a shipping department. They stock big packing boxes, but they will not deliver, by handcart or even by rail. Customers must come by and select, or telephone, and then carry away. For the U.S. market they use containers that can be loaded on giant trucks, taken to the nearest port and shipped. They don't care for the method, but one wartime episode helped take them out of the shipment business forever. Romoletto Sormani had sent off a fake pig to a theater in Turin and confirmed the shipment by telegram. When it arrived there was a gaggle of finance police, carabiniere and bureaucrats, all convinced that a black-market porker was destined for human consumption. No charges were filed when it turned out that the pig was *cartapesta*.

Now and again there is another crisis, as when a Rancati armchair collapsed under tenor Ramon Vinay during a performance of *Otello* in Milan in the mid-'40s. Fortunately, only the armchair had to be replaced.

American customers usually behave impeccably, say

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the brothers, though there were tense moments when an American turned up to rent helmets for *Spartacus*. "We thought all heads were nearly the same size," says Giuseppe Sormani. "But I guess American ones are larger. There was this tall American trying on helmets in the middle of the *deposito*, and throwing them right and left saying 'too small, too small.' We took him to his hotel and then we all stayed up half the night opening the helmets at the back, making them larger and sewing in new linings." There is no extra charge for this kind of service, because to Rancati it is a quality that the customer appreciates.

Rancati in Milan has been providing props for Verona's Arena for 78 years, and Rome is proud to have provided Roman helmets and accouterments for the annual Good Friday procession in the town of Valmontone since 1948.

Easter is, in fact, a bonanza all over the place. Rome, which specializes in Rome props, rents out all its helmets about ten days before Easter because every village for miles around needs Roman villains in its Good Friday processions. Milan, which provided a very authentic-looking cross for Zeffirelli's Jesus, does a land-office business in gigantic fake Easter eggs for department-store displays.

"What happens if the items are lost, or damaged?"

"They pay," says Angelo simply. "But it rarely happens. People like these things as much as we do. They take care of them, and they bring them back."

It is all, one gradually comes to understand, part of the *passione*. The Sormani brothers have increasing difficulty finding artisans willing enough or talented enough to create special items. But they have no difficulty whatever finding young men and women—including Giuseppe's son and daughter—eager to work in their warehouses as clerks, repairers, guides to the contents. Still, there was the man in Milan who began at 17 and stayed on the job until age 72, when his union insisted that he retire. And there is still one in Rome who began as a teenager in 1954; he swears he will never leave. This man speaks enough English to deal with the BBC by telephone, and courteously seeks to help visitors, climbing over and around the tiny wood-burning stove that keeps the chill off the office in winter, past the young lady in blue jeans mending a World War II musette bag on an ancient Necchi sewing machine, past the man spraying gilt paint on some wreaths for *Andrea Chenier*.

"Theater," he says with a brilliant smile, "is something one can love."

Gigantic papal tiara of tin and fake gems was used in play about the life of Roman poet Giuseppe Belli.

Costume elements for first *Otello*, in 1887 at La Scala, were fashioned from scenographer's watercolors.

Look, let's be awfully honest about all this, shall we?

After months of giving us an armload of excuses, but not a single New Zealand advertisement, it jolly well looks like Harry Bright, our dear, distracted Advertising Manager down under in Wellington is too busy getting around New Zealand to get around to that New Zealand ad.

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Harry Bright's good wife, Eloise, (did you actually expect Harry to do it?) sent us these awfully nice snaps, capturing all the many worlds of New Zealand...and a teensy bit of Harry to boot!

Harry browsing at Milford Sound (a dead ringer for Norway's Fjords!)

Looks for all the world like Harry snorkeling in the Caribbean, but it's our Bay of Plenty!

That's Harry ruining a perfectly splendid snap of a Maori Village (Polynesia in New Zealand!)

Harry's favorite fishing spot at Lake Rotorua (or is it upstate New York?)

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Despite the high price tags on some of the new plants, the average cost of generating U.S. nuclear electricity is still under a nickel per kilowatt-hour.

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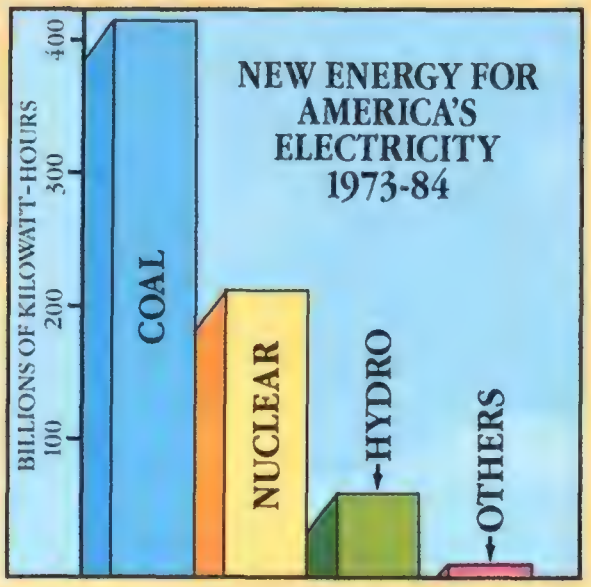

Coal and nuclear energy have provided over 90% of all the new electricity added to our energy supply since 1973. This has enabled utilities to reduce their consumption of more costly oil and natural gas. Source: Energy Information Administration/U.S. Dept. of Energy.

An electrifying economy

The U.S. Gross National Product is a basic measure of economic activity. Since 1973 the GNP has grown by 31%, which closely parallels the 33% growth in the nation's electricity demand.

But over the same period the direct burning of fuels for *non*-electric energy has actually gone down, as the economy converts to using more electrical energy.

What many people don't realize is that most of America's new electricity is coming from coal and nuclear power. Electricity growth in 1984 was 58% coal and 24% nuclear, according to the Federal Energy Information Administration.

The key to energy independence

The growing supply of electricity from U.S. coal and nuclear also reduces our dependence on *imported* energy.

But we're still a long way from energy independence. America is paying a billion dollars every week for foreign oil. Greater use of domestic electricity sources means fewer U.S. dollars sent abroad.

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For a free booklet on this subject, write the U.S. Committee for Energy Awareness, P.O. Box 1537 (K7), Ridgely, MD 21681. Please allow 4-6 weeks for delivery.

Information about energy America can count on

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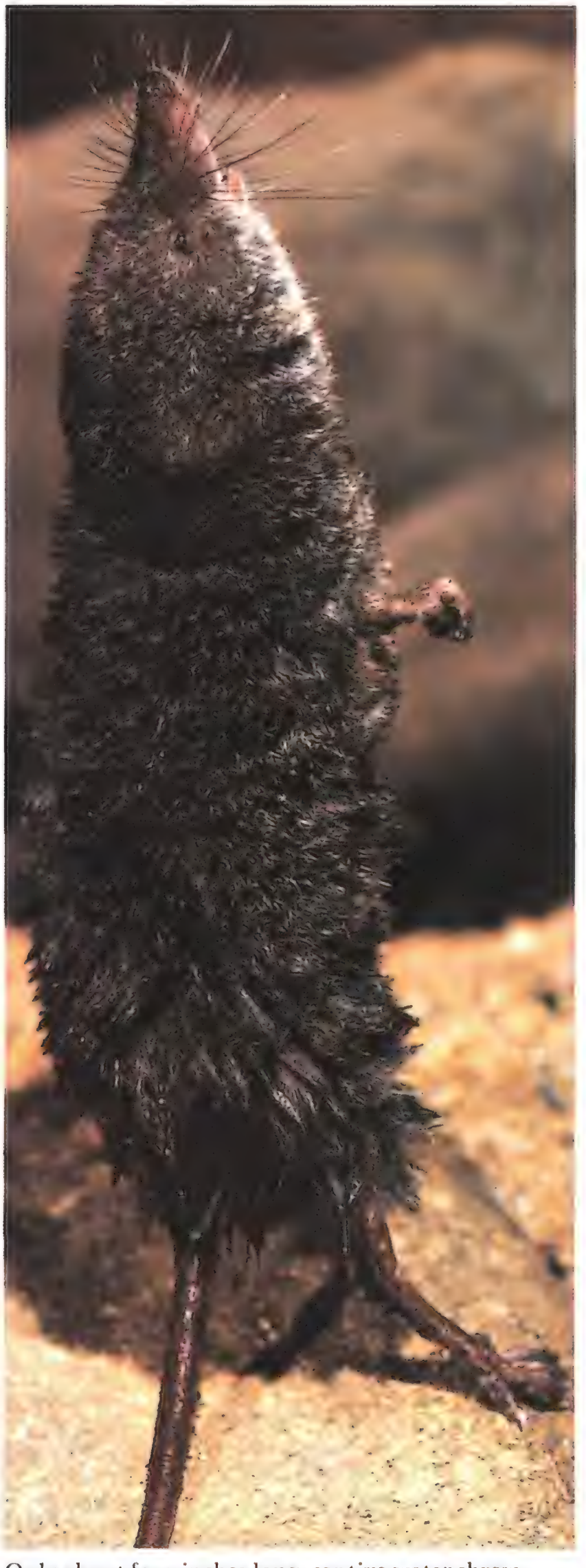

Only about four inches long, captive water shrew stands on tiptoe to investigate its new environment.

By Donald Dale Jackson

It is about time the shrew stood up to be recognized

The simple fact that it's tiny may explain why scientists and laymen alike have paid too little attention to this hyperactive creature

Everyone knows what a shrew is. Nag, nag, nag. Right? Screech and scold. A bad-news she-devil with blood in her eye. Shakespeare wrote a play about the taming of one—"Katharina, the shrew" he called her—and when the Bard's shrew cut loose she raised "such a storm/ That mortal ears might hardly endure the din." Thus, alas, are reputations made and destinies sealed. The evolution of language—shrew, shrewish, shrewd—helped to give this inoffensive-looking creature the bum rap that dogs it to this day.

The real shrew is a squeaking, scuffling, constantly active little mammal—there is none smaller—but something about it has always inspired outsize tales of wickedness. The shrew "feigns itself gentle and tame," a 17th-century English cleric wrote, "but being touched, it biteth deep, and poisoneth deadly. It beareth a cruel mind, desiring to hurt anything." When Dr. Samuel Johnson reported in his famous dictionary that the shrew "is said to lame the foot over which she runs," the feminine form was probably no accident. The Inuit people of the Canadian North reportedly believed that the wee devils could burrow into a human heart with fatal consequences.

All this is blatantly unjust. Shrews don't lame feet or tunnel through flesh; they don't even scold all that much. What they need is a good public relations adviser. Instead of dreading them we should salute them. Nature dealt shrews a harsh hand, but in spite of this they are among the most successful and ubiquitous—if largely unnoticed—critters on the planet.

Photographs by Dwight R. Kuhn

Claws on short-tailed shrew's foot assist in digging tunnels. Ridged pads facilitate a good grip on rocks.

Shrews make a living on every continent save Australia and Antarctica. They have adapted to desert and tundra and every habitat in between. They can find a meal underwater, under a log, or under the snow. Preyed on by a hostile host of birds, reptiles and other mammals, they have nonetheless proliferated so freely that scientists blanch at estimating their numbers even regionally (though one fearless researcher said there were perhaps 84 million in Wisconsin). Even more commendably, for their sake, shrews have managed to achieve all this while rarely colliding with the interests or welfare of humans.

For all their success, life for these puny beasts—they range from two to seven inches long and weigh, at their burliest, less than two ounces—is a mean and joyless scramble. Their metabolism is extraordinarily high. The heart rate for one species was measured at 780 beats a minute while the breathing rate was 800. This sentences shrews to a life without leisure. They have to consume as much as half their body weight daily to produce the energy needed to replace what they burn off. Consequently, shrews hustle through their allotted span—they normally live about 16 to 18 months—at breakneck speed. They travel alone, eat quickly and eschew diversions. "All they have time for is eating and, occasionally, sex," says mammalogist Gordon L. Kirkland jr. of Shippensburg University in Pennsylvania. "They can't afford to pass *anything* up. They literally burn themselves out in a year and a half. There's no play, no basking in the sun. They hunt and rest and then hunt some more," alternating 20-minute bursts of foraging with short siestas.

Their normal pace is a brisk, alert shuffle, with their distinctive pointed snouts aquiver and scanning the forest floor for worms, insects, spiders, snails, pupae, carrion—any fuel to stoke their relentless inner furnace. In northern winters shrews add seeds and plants to their diet out of necessity. The short-tailed shrew, a relatively large (about an ounce) member of the tribe common in North America, has the advantage of a toxic venom that it secretes from a gland in its mouth to paralyze prey. "Short-tails" sometimes immobilize insects and then stash them alive in their narrow runways, just beneath ground level, for later consumption. Shrews excavate elaborate networks of tunnels

Donald Dale Jackson wrote about parrots in April, Venezuela's Cerro de la Neblina in May and Denver's Recording and Research Center in July.

When two short-tailed shrews meet and food is in the vicinity, a noisy confrontation is likely to occur.

Assuming aggressive postures over a worm, animals shriek at each other until one leaves or fight starts.

Formidable incisor of a young adult is suitable for seizing prey. Eventually, the dark area will wear away.

with tiny openings to the surface and side chambers for the small nests they line with leaves and grass.

The shrew's preference for going about its high-octane business in the undercarpet beneath snow, leaf litter and the top layer of soil explains why few people ever see one: they operate below the threshold of human notice. Most residents of shrew country, which includes almost every place in North America and Europe along with large chunks of Asia and Africa, would be hard pressed to identify a shrew, though their cats would have no trouble doing so. (Cats like to kill shrews but usually decline to eat them, probably because of their ripe, musky odor.) Until fairly recently, in fact, shrews were not only invisible to mankind at large; they received surprisingly little attention from science.

When researchers first began trying to capture shrews for study, they often came up empty-handed. Dr. Thomas W. French, a zoologist and shrew expert who works for the Massachusetts Division of Fisheries and Wildlife in Boston, believes that was because they were not shrewd enough in their methods. They used peanut butter and oatmeal as bait on snap traps, and shrews remained disdainfully aloof. When they finally switched to pit traps, shrews began turning up in laboratories, which is where almost all shrew research has been conducted.

Biologists remain mystified by much about shrew behavior, including the reproductive and social habits, such as they are, of many of the approximately 300 species. But academic reinforcements have recently appeared on the horizon. "There was a time when there were only a few of us shrew people," Gordon Kirkland says, "but now shrews seem to be 'where it's at.' It's like a bandwagon." Thomas French explains the animals' attraction for scientists this way: "How many mammal species are there where you can still find the first one in a state? That's what's astounding. A man in Indiana set out 36 traps in 1981 and found two species that hadn't been found in the state before. Shrews are still a scientific frontier."

Few mammals anywhere face life's toils and travails as inadequately equipped as a newborn shrew. The babies are blind, deaf, toothless, hairless and the size of a shelled peanut. But like everything else about its life, a shrew's infancy and adolescence are telescoped and accelerated: fur appears in a week, the tiny eyes open at two weeks (though vision is never good), and soon the nearly grown tyro has working ears, a mouth-

The frog outweighs it but determined water shrew hangs on. After a five-minute struggle, the shrew won.

Diminutive saw-whet owl perches over a freshly killed shrew. One saw-whet may eat several shrews a night.

ful of sharp, no-nonsense teeth and a yen to explore. On their initial forays from their underground nests some types of shrews display a characteristic seen in no other animals, with the exception of circling circus elephants: they form a caravan with each shrew biting the hindquarters of the one ahead. "It's like they're on a field trip where the kids are told to hold hands," says Dr. C. G. van Zyll de Jong, a shrew expert at the National Museum of Natural Sciences in Ottawa, Canada. Van Zyll de Jong speculates that "caravanning" is a survival adaptation that has evolved in these creatures with poor eyesight as a way to avoid getting lost.

Female shrews commonly produce two or three litters of four to seven young each during the warm months; gestation takes about three weeks. Some evidence suggests that females are territorial, marking their domain with a scent, while males are not. Male shrews, perhaps distracted by the unending struggle for survival, seem to show no interest in hanging around the nest and helping to feed and instruct the young. The one known exception is the male in a species uncharitably designated the least shrew, who sometimes remains home with the kids.

Just-weaned shrews, like youngsters of other species, sometimes rush into sex unprepared and ill-informed. While doing research at Ohio State, Marguerite Goodwin put two six-week-old shrews together. One, presumably a male, immediately commenced chasing the other. When the quarry stopped running, the first shrew launched himself into the air. Before he made contact, however, the second shrew made a 180-degree turn, causing the aggressor to land the wrong way. Both parties promptly retreated in confusion.

Scientists are not sure whether a shrew on the prowl for food relies primarily on its nose, ears or sense of

Short-tailed shrew makes a quick meal of wriggling worm. Spiders, insects make up the shrew's main diet.

Much larger mouse was no match for short-tailed shrew. Animal's venomous bite can immobilize prey.

touch; all agree that the animal's eyes are not much help. The critical sense may vary with the species—water shrews, streamside dwellers who hunt underwater, probably depend on touch, while habitués of the forest floor are more likely to follow their long noses. There is also a growing dossier of evidence that shrews, like bats, employ echolocation, sending out high-frequency sounds and measuring distances by the echo. The shrew's detection mechanism is not yet understood, but experiments have shown that shrews in a glass-topped tank don't have to bump their snouts on the lid to know that they can't escape. "In a new situation they 'head-pop' all over the place, jerking their heads up and down and scanning," French says. "They seem to be sending out impulses."

Van Zyll de Jong believes that the shrew sonar system only flicks on when the animals reconnoiter new terrain, scouting for cover. He suspects that they navigate more familiar ground on memory, without using their detectors, which makes them vulnerable to trapping. This trait is called the "*Andrea Doria* phenomenon" for the passenger liner that collided with the *Stockholm* and sank in a regularly traveled shipping lane off Nantucket in 1956.

Laboratory observations lead researchers to believe that the last thing a hunting shrew wants to see is another shrew. When two meet, one normally scoots off without further ado. When they run into each other in a tight place, such as a hollow log or a tunnel, they react like stallions dueling for a harem of mares. At first, both squawk their little heads off. Sometimes one prevails without a fight; one will raise up on its hind legs and the other will hurl itself on its back and kick, complaining bitterly all the while. Other times both remain unintimidated and the fight is on, a furious, spinning, heads-to-tails flurry of bared teeth and flying fur that often leaves one dead, with the victor eating the victim's remains.

Notwithstanding their status as the lowliest mammal in the woods, shrews behave as if the critter they can't take hasn't been born. The squeak they emit when they encounter another small animal, van Zyll de Jong says, translates roughly as "get out of my way." Mice and voles, both bigger than the largest shrews but not as combat-ready, have been dispatched by a quick chomp on the skull. Peaceable frogs, young snowshoe hares and small snakes have all succumbed to shrewish wrath. Amateur naturalist Theodore Roosevelt once put a short-tailed shrew and a mouse together and was appalled to observe the result, a quick and savage kill by "the bloodthirsty little shrew." Their reputation for ferocity, albeit gilded by superstition, is not undeserved. "I'd call them ferocious, sure," says zoologist Kirkland. "For their size they're about as ferocious as they can get. If shrews were the size of bulldogs, Man might never have evolved—they might have wiped everything else out."

The shrew's least endearing characteristic is doubtless the cannibalism occasionally witnessed in captivity. Shrew keepers have seen mothers, presumably rattled by incarceration, eat their young—as other small mammals sometimes do. Van Zyll de Jong found that when he caged male and female Arctic shrews together, they repaired to opposite corners and ignored each other. When zoologist Irwin Martin was at the University of Massachusetts at Amherst, he did the same thing with short-tailed shrews in an open-to-the-elements compound. They coexisted only until the weather turned cold. Then, one attacked and ate the other. Martin theorized that the shrewicide was an

Shrew hunkers down on a rock to attend to personal hygiene, here grooming its face with its front feet.

instinctive adaptation to the onset of winter, with its declining food supply and consequent increase in competition. When he placed a newly-trapped shrew in the compound with another one, Martin discovered the newcomer was usually killed within 24 hours.

Researchers have observed that shrews become visibly agitated when they are out in the open for more than a few minutes, and with good reason. Hawks, falcons and owls menace them from the sky; coyotes, weasels, foxes, skunks and cats prowl around their burrows waiting to pounce. Snakes sometimes infiltrate their subterranean chambers. In most cases the slower shrew, even with its teeth flashing, faces a mismatch.

Biologists long ago noticed that shrews seemed to die in wholesale lots in the fall. The puzzling phenomenon of a profusion of unmarked shrew corpses in the woods gave rise to several theories. One popular notion was that the nervous, hyperactive little scramblers succumbed to shock—that they keeled over from fright at the sound of thunder or the looming presence of an enemy. But the current wisdom is that autumn simply happens to be the time when shrews run out of life. They die of what people sometimes call natural causes. "Their teeth wear down, they *look* old, they just give up the ghost," says van Zyll de Jong. It seems peculiar that their bodies sometimes are found untouched. "I don't think they're that appetizing," Thomas French explains. "They have that dirty-sweat-socks odor. Mammalian scavengers may be saying, in effect, 'I'm hungry, but this is ridiculous.' "

Neither the enmity of their foes nor the feverish demands of a life on the run have diminished the shrews' astonishing abundance. In good habitats, estimates of their numbers run to a dozen or more per acre. Their secret, as with most successful creatures including coyotes, starlings and humans, is their ability to adapt. Water shrews have paddlelike feet so they can maneuver underwater; desert shrews live a scaled-down, nocturnal existence and need little water; rock shrews have distinctive teeth that equip them for probing rocky crevices; tundra shrews use the snow cover to stay warm; short-tailed shrews prudently store food to avoid running short in winter. Shrews have adapted to whatever fortune flings their way.

Students of evolution find them fascinating for still another reason: a shrewlike mammal was the grandparent of us all. The first placental mammals to evolve during the age of the dinosaurs were small insectivores with some of the characteristics we see in shrews today. "When the dinosaurs died off the ecological landscape opened up," says Kirkland, "and the insectivores found other niches. Most mammals derive from them. Shrews are interesting because they're still primitive in evolutionary terms."

Despite their current scientific vogue, shrews and Man are still only slightly acquainted with one another—a fact that may be the shrews' most formidable hole card. Two-legged mammals have no particular quarrel with them. "They don't do any harm, they cause no economic problems," says zoologist Irwin Martin. "They don't cost us any money. They're not like gypsy moths; they *eat* gypsy moths when they can catch them." No species of shrew has as yet turned up on an endangered list, though a few, notably the Gaspé shrew of eastern Canada, are regarded as potentially vulnerable to habitat destruction by acid rain.

In some places, shrews have become Man's little helpers. In India they have been protected because of their usefulness in holding the cockroach population down. Canadian officials introduced masked shrews to Newfoundland a generation ago for "biological control"—to check the ravages of a tree-damaging pest called the larch sawfly.

But if shrews merit our respect, and they do, it is for reasons other than their contributions to the gross national product. The scientists who know them best share a fascination with their grit, their persistence and their ability to make the best of a bad draw. They may be invisible, but they're indomitable. "I'm in awe of them," Martin declares. "They're so efficient, they have so much energy, they make a living so well. I feel silly saying it, but in their own way they're, well, cute."

"I sometimes find it hard to believe that they really work, as tiny and ephemeral as they are," Thomas French adds. "But there's as much in that little package as there is in a large mammal. They're nasty but I admire them. They're untamable."

Poised to take a drink or a dip, a water shrew enjoys a rare break from its desperate search for food.

The image of the staid executive lounging in a posh corner office is a myth. Reality is hard work, catching "red-eyes" and solving problems on a fold-down tray at 35,000 feet.

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By Roger Kennedy

Arlington House, a mansion that was a monument

When George Washington's 'adopted son' built the home that proudly overlooks the capital, it was a continuation of politics by other means

Virginia Historical Society

Young Custis sat for this miniature portrait in his 1799 uniform as cornet in a cavalry company.

You can't miss it. There the place stands on its hill above Arlington Cemetery, recently repainted and glowing golden every night in the floodlights. People often think it was built as some sort of funereal ornament, but it was a private house, probably the most conspicuous private house in America. It was intended to be conspicuous by its creator, George Washington Parke Custis.

He wanted Arlington House to be a residential Washington Monument, long before the familiar obelisk across the Potomac was built. He wanted to be its curator too, and for more than 50 years he was.

It is ironic that an essentially modest man, Custis' famous son-in-law Robert E. Lee, who eventually lived in the place, should have been the one to describe it as "a house that any one might see with half an eye." It would be easy to mistake the design as a kind of self-advertisement on the part of Custis. He was, after all, a man with a theatrical flare who certainly loved the limelight (in the literal sense). But to regard Arlington House as self-promotion would be to miss the complexity of Custis' character. The conspicuousness of his house was an act of deference.

Custis reveled in regarding himself as a Washington which—at least in spirit—he was. The grandson of Martha Washington by her first marriage, he had been adopted by the Father of his (and our) country. The political views which he preached endlessly were Federalist like those of Washington. He tried playwriting, painting, farming, real estate. And if he looked backward to the American Revolution for inspiration, he had some practical ideas well ahead of their time. Among them the notion of creating historic sites where visitors could get an idea of how people lived in the past, and a national department of agriculture to help encourage proper use of land.

Such successes as he did have were dimmed by the radiance of his famous foster father, and after his own death by that of his soldier son-in-law Lee.

Custis was raised at Mount Vernon by Washington and the indulgent Martha. He adored the stern old man. He tagged along around the estate. Washington thought him promising. The boy was, he once said, "as full of spirits as an egg shell is of meat."

The great General's heavy hand, however, seems to have pressed him into a textbook case of childish passive aggression. Washington expected "ready submission" and got "an almost unconquerable disposition" to laziness—at least where studies were concerned. Custis made early departures from several schools. At Princeton he was dismissed under mysterious circumstances. According to the official record the

On its green hillside above Arlington Cemetery, the house is one that anyone with "half an eye" can see.

boy had rebelled "in various ways to lessen the authority and influence of the faculty."

Custis, though small and puckish in appearance, had a gift for words and courtly speeches. He could do the work of the estate—though all his life he was a little foggy about arithmetic—and he was a skillful deer hunter. The walls of Arlington House are decorated with skulls and antlers from deer (he referred to them as "valiant deer") like those he shot to provide venison for Mount Vernon. In 1798 when he was 17, war with France threatened and he took officer training, to win a commission as a cornet (i.e., second lieutenant). There was no war. Still, after only a few months' service, he wound up as a brevet major. Yet his dogged refusal to be educated continued to astonish Washington. The man who had successfully coped with the British, the Continental Congress and Benedict Arnold sounded just like any exasperated father when he wrote: "For it would seem as if *nothing* I could say to you made more than a momentary impression."

The General's death at 67 in 1799 freed Custis from the Presence, while putting him in servitude to his guilty memories of rebellion and the ways he had disappointed the departed.

He promptly committed his talent and his vast inherited fortune in land to serving the man—and the woman, of course—who endowed him. After Martha Washington's death he tried to buy Mount Vernon, which had gone to Washington's nephew. He had inherited "one-fourth of the bottled wine," many portraits and George Washington's desk. Now, recklessly bidding at the auctions, he bought up corn drills and axes and a mold for making bricks, and personal relics including the General's coach and his famous red-trimmed war tents from the Revolution. He also acquired the Hessian and British battle flags presented to Washington after Trenton and Yorktown.

National Gallery of Art, Washington

In celebrated family portrait by Edward Savage, Custis stands at left with the General and a globe.

These cost him $4,500 (in a time when a cow cost him only $16), a debt it took years to pay off. Yet right away he started work on his now famous house. Like many land-rich but cash-poor planters, he put up the two wings first, completing them in 1804, then biding his time for more than ten years until he could afford the vast pillared central section. Stuffing both wings with Washington's treasures, he set up housekeeping with his young new wife, Mary Lee Fitzhugh.

Custis found time for visitors interested in the

Roger Kennedy is Director of the National Museum of American History. This article is adapted from his book Architecture, Men, Women, and Money in America *(Random House) and from historian Murray Nelligan's unpublished manuscript on G. W. P. Custis.*

Martha Washington points her fan at new map of Washington City as Nelly Custis and servant look on.

General. Indeed, over the years he encouraged them with entertainments and speeches, summer picnics, boat rides and alfresco dances held beside a spring near an oak not far from the Potomac. He even got a ferryboat concession to bring folk over from Georgetown and Washington City.

Like the General, Custis strove to improve agricultural practice, breeding fine mules and an especially woolly strain of sheep that for a while were the best in America. Early on he began holding annual sheep-shearing exhibitions down on the Arlington waterfront, offering prizes for such things as the best ram lamb and the best homespun cloth. So that America might become less dependent economically on Europe he encouraged native breeds, including his own special Arlington Supremes, against the imported Merinos, which then cost too much for most American farmers to afford.

The shearings became little Federalist rallies. He would set up the General's campaign tents down by the river and judge the sheep and cloth there. Scores of guests would sit down at long trestle tables with floral decorations, plenty of food and wine, and a postprandial speech by the host appealing to patriotism, extolling industry, or just telling George Washington stories. There was the one about the Mount Vernon hound dog named Vulcan who stole a whole ham just before a formal dinner, devastating Martha and the menu, but making the customarily austere General roar with laughter. And the one—also true, apparently—about how an Indian, years before the American Revolution, foretold that Washington would one day found a state and be head of it.

Speeches by "the inevitable Custis"

In the face of Jeffersonian and anti-Federalist fears of federal power, Custis was also likely to call for an adequate army and navy, and for government aid to everything from industry to sheep farming. It was at a sheep-shearing dinner that he first urged the creation of a national uniform for the army, made of homespun, not "discernible in the woods at any distance," plus calfskin cap and hunting knife. Characteristically he offered a prize for the best example. He spoke enough at public dinners so that anti-Federalist critics referred to him as "the inevitable Custis."

Just across the river from these goings on, Washington City not only bore the General's name, it also bore the burden, as Custis did, of the General's expectations. Custis' huge land holdings (close to 20,000 acres) kept him tethered to Arlington and to the languishing agricultural fortunes of tidewater Virginia. Like many sanguine local landowners, Custis hoped the federal government would act to encourage industry in the valley of the Potomac, and eventually fertilize their declining soils with the rich compost of bureaucratic spending. Ultimately the latter did occur, but more than a century later. For years Custis lived in a not quite finished house, always hoping for a golden future, always custodian of someone else's golden past.

As Custis saw it, the main reason for the delay in industrial progress was the back-to-back Presidencies of Jefferson (1801-09), Madison (1809-17) and James Monroe (1817-25), a long time in the political desert for the Federalists. Through all this period the conflict raged between classic visions of America's future: strong central government versus states' rights, well-defended industrial republic versus agrarian arcadia. Between, in short, the followers of Washington and the followers of Jefferson.

The morning room at Arlington House, once a Custis studio, now houses his large view of Washington at the Battle of Monmouth in 1778. On the wall at left are smaller Custis pictures of Germantown and Trenton.

Washington's party was liberally assaulted as anti-democratic, elitist and power mad. Jeffersonians were accused of ruling through mobocracy, and Jefferson was called a traitor to his class. Like many another American, Custis felt Jefferson had shelved the Spirit of '76 in favor of the French Revolution, whose egalitarian excesses and disregard of property led straight to the Terror and then to dictatorship by Napoleon, the "Corsican Caesar," as Custis called him.

Political differences often led to violence. In 1812, after "Mr. Madison's War" had started, a Baltimore mob burned down the plant of a Federalist newspaper for opposing Madison's policies. The paper was set up again in a new building with help from leading Federalists, who regarded the war as an economic disaster brought on in part by anti-Federalist failure to arm. Among them were two Revolutionary heroes, Gen. James Lingan and "Light Horse Harry" Lee, the father of Custis' son-in-law to be. The mob attacked again, this time killing Lingan and leaving Lee for dead. (To be *sure* he was, they dropped hot wax on his eyes as a test to see if he was still alive, but he managed not to react and so survived, though maimed for life.) Several prominent men declined to speak at Lingan's funeral in Georgetown, for fear of reprisal. But Custis accepted, passionately declaring in his oration that where freedom of the press was "prostrated at the feet of lawless power, the citadel of freedom must soon surrender."

"The feet of lawless power" were the President's feet. Perhaps as a result of Custis' remarks, Madison refused to give him a commission when he applied for one, wanting to help defend the city of Washington against threatened British attack in the summer of 1814. Custis joined up anyway as an enlisted man in the artillery. On August 24, it was the gun he commanded that fired the last shot at the British during the disastrous Battle of Bladensburg when American forces were put to rout, letting the British set fire to the now helpless capital. As the U.S. forces dispersed that day, Custis found himself free to go home. But first he stopped off at the President's mansion—to make

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Corcoran Gallery of Art, Washington

A planter as well as a painter of battle scenes, Custis in middle age became a playwright, too.

Arlington House

His wife, Mary Lee Custis, was painted in 1831 when the couple had been married for 27 years.

absolutely sure the Stuart portrait of Washington had been removed to safety.

The rivalry could extend even into architecture.

It was not that Washington had ever chosen up sides in the Greek-Roman controversy of the 18th and early 19th century. He and Jefferson both wanted to give some dignity to the new capital of the young nation, replacing the hodgepodge of frame shanties and muddy streets, and even getting rid of the red-brick 18th-century houses that Jefferson, especially, associated with British colonial rule. It seemed obvious to both men that the state buildings of a republic just founded by a classically educated people should be classical in form.

In a style that Jefferson hated

Washington, though he liked things direct and simple, as the famous veranda at Mount Vernon demonstrates, would no doubt have approved of the blocky simplicity of Arlington House. He tended to be bored by esthetic debate, however, while Jefferson was not only an architect but a man celebrated for his strong opinions about design. His taste was an amalgam of British-Palladian, Franco-Roman and Albemarle County original. Jefferson liked Roman. And he liked domes.

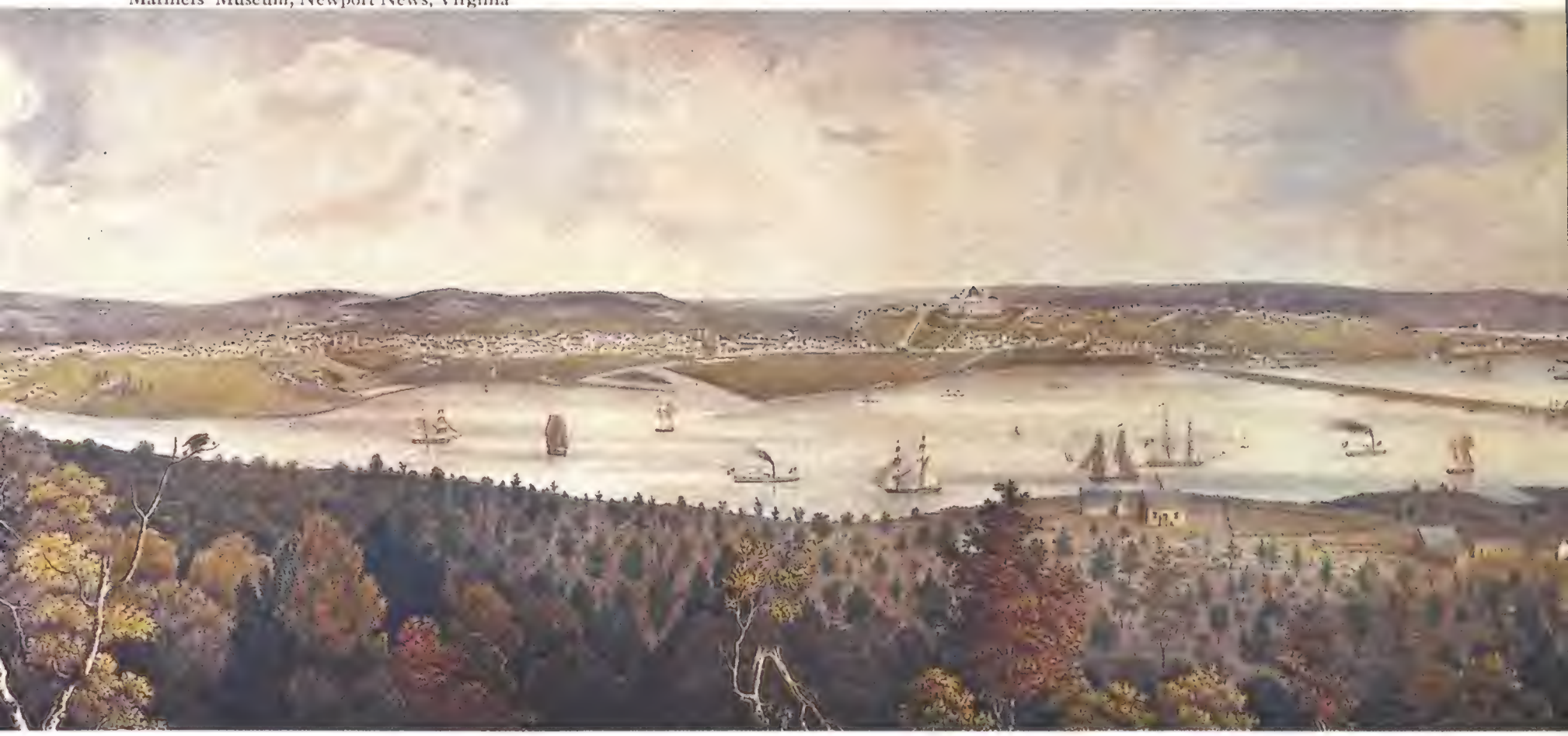
With its dome and its sweeping Palladian wing, Jefferson's Monticello is Roman. His chef d'oeuvre, the Pantheonic rotunda of the University of Virginia, is Roman. Even his present-day memorial, its dome gleaming white beside the Tidal Basin of modern Washington, is Roman. Under Jefferson, the ceremonial buildings in the nation's capital were to become so Roman that the place might fairly have been called not Washington, at all, but Jefferson City. He couldn't abide Greek architecture; not a single Greek example was included in the anthology of classic forms that he erected at the University of Virginia.

Custis couldn't abide Jefferson. Nor could his adored grandmother, Martha, who said that next to her husband's death, the most painful experience of her old age was having to receive the man at Mount Vernon.

George Hadfield, the architect chosen by Custis for Arlington House, had come to America under Washington's patronage, then got into trouble over the construction of the Capitol—because, according to fellow architect Benjamin Latrobe, he could not prevail against "the rogues then employed in the construction of public buildings." With Hadfield's help Custis created Arlington House in a style Jefferson hated, overlooking what had become Jefferson's city, where everyone would notice. With its huge Doric columns, it was flagrantly, offensively Greek.

The age was one of symbolism. The implication of

Mariners' Museum, Newport News, Virginia



The panorama from Custis' porch in 1838 included Potomac River traffic, with busy steamboats, and the Long Bridge (now site of Fourteenth Street Bridge). Arlington area was then part of District of Columbia.

Custis' Greek temple looming up across the Potomac was clear enough. Even in architecture the subtle sage of Monticello did not agree with the solid, foursquare principles of General Washington.

The place was 140 feet across the front, specifically large enough so the look of it would "carry" over the river. Hadfield used eight pillars, each five feet in diameter at the base. Inside, in the nave of this residential temple, the ceilings were nearly 15 feet high, with tall archways leading from room to room.

Except for the dimensions, everything was done to economize. There was no expensive stone. The steps of the portico, which could not be seen from a distance, were made of wood. The porticoed facade was covered in a special stucco compounded of fossil shells, called "hydraulic cement" by its inventor, David Randolph, because it was harder than regular stucco made from crushed oyster shells. Both facade and hollow brick columns were scored and streaked to simulate marble. Even so, Custis, "not being able to command cash at this time from the heavy expense of my building," had to write his druggist in Alexandria asking him to accept a note in lieu of payment.

By 1825 Custis had watched Washington's party become extinct. Though he later would call himself a Whig, he really remained a Federalist until his death—hopelessly out of date, but in historic perspective right far more often than he was wrong. It took northern industry, western expansion, struggles over tariff and the states' claims they could nullify laws passed by Congress. It took a Civil War, too. But the country finally went the way Washington had planned and Custis kept proclaiming that it should.

Meanwhile, year after year he designed and painted vast heraldic flats for the Washington's Birthday dinners in Alexandria. A typical image showed a monumental obelisk labeled WASHINGTON supported by FAME and LIBERTY. He also did six huge Revolutionary War battle scenes including Trenton, Yorktown and Monmouth, which still exists (p. 160) and is seven feet high by 11 feet long.

John Trumbull they are not. The most kindly observation that contemporary critics could manage about Custis' painting was that it "had a good effect when viewed in perspective." One battle scene was hung in the Capitol building, however, and they were all accurate. Weapon and uniform experts still use the Monmouth painting as source material.

Custis continued to tell Washington stories, and write them too, publishing them in the *National Intelligencer*, broadening his literary canvas to deal with battles and politics as well as home life. Two years after his death they were collected in book form by his daughter, Mary Custis Lee. Despite hero worship and galloping sentimentality, *Recollections of Washington* remains a unique compendium of useful Washingtonia. Biographers have cribbed from it ever since.

At 46, Custis embarked on a career as patriotic playwright. His first play, called *Indian Prophecy*, opened in Philadelphia on July 4, 1827. Although a

critic pronounced it "absolutely destitute of plot, incident, character," the audience did not agree. Thereafter, in addition to all the work of his estates (he was a great believer in fertilizers), Custis kept turning out plays, sometimes at a rate of two a month. In 1833 he may have set an indoor world's record when a Baltimore theater owner desperately called on him for an instant show and Custis obliged him—in two days. It was a tuneful item about the battle for Fort McHenry which gave rise to "The Star-Spangled Banner."

Indian Prophecy, along with *The Pawnee Chief* (circa 1828) and his best play, *Pocahontas* (1830), was a pioneer effort that helped make Indian drama popular in America. Taken up by famous actors like Edwin Forrest (see page 168), the vogue lasted almost till the Civil War. Custis also wrote the first play ever about the railroad, a Yankee Doodle Dandyish hit celebrating the new nation's expansion toward the kind of industrial growth he had always advocated.

Contemporary newspaper accounts suggest the plays were lively enough. He called for dramatic special effects: a locomotive snuffling onstage, a riverboat plowing down the Mississippi. In lyrics he invoked a balloon to the moon. He invented comic characters, a nervous traveler named Fidgett and Irishmen like Mike M'Ilhany and Thady O'Brian, celebrating their work building America. Sample song:

Och, good luck to the trade of the shovel and spade
'Tis the very best trade of all;
And St. Patrick's brave boys know how to handle
those toys,
In making rail road or canal.

Of such lyrics Custis characteristically remarked: "The poetry [is] probably bad, but the sentiments, I trust, will be endorsed *good.*" Certainly his audiences approved, especially the Irish, for Custis spoke up loudly and often in favor of their fight to be free of Britain, just as he would speak up for Simón Bolívar, and for Greek independence from the Turks. It is difficult to say, though, whether the most convinced Federalist fans, much less the grave shade of his hero, would have applauded these lines:

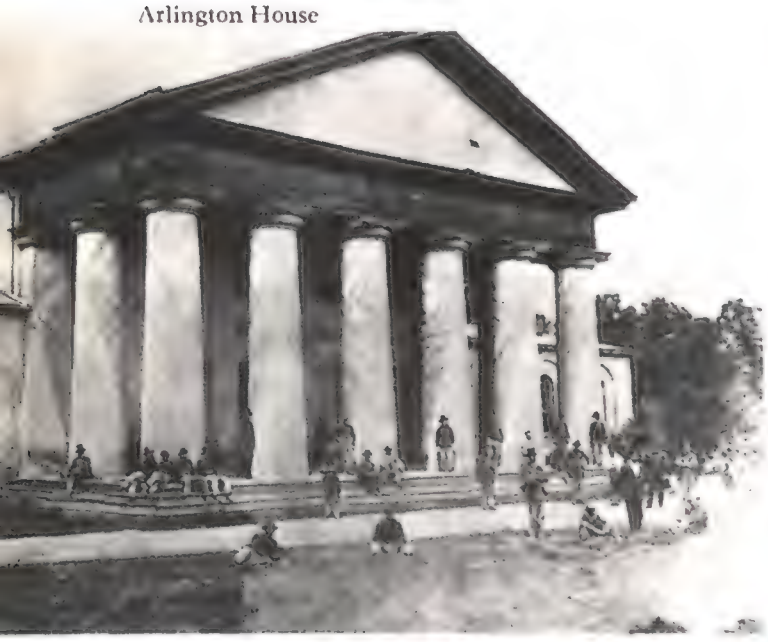
And now to *him* who first did plan
Our public works so grand'y
The purest, wisest, greatest man,
Who ever blest our land'y.

Visitors to Arlington House in later years remember Custis as a "shabby old man with angular features and thin grey hair, who would come down from the mansion, violin in hand, and amuse the children by the hour." He sometimes gave interested children scraps of Washington's handwriting, and over the years distributed all sorts of relics to people whom he thought would care for them and who really shared his own affection for the General's memory.

During a tour of America in 1825, Lafayette got an umbrella and a Masonic sash. Andrew Jackson got Washington's pocket telescope. Custis left the tents to his daughter Mary. The battle flags went to the American people. (One of the tents may be seen at the Smithsonian's National Museum of American History.)

Though he came from Virginia, Custis was for the Union first, last and always. "Call me a Yankee while I live," he proclaimed. "Let it be graven on my head

Arlington House



During the Civil War, Union soldiers lounged on wooden steps of mansion. Owner, Custis' daughter Mary, and her husband Robert E. Lee left in 1861.

Both: Washington and Lee University

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stone!" He meant Yankee in the sense of all Americans who fought the Revolution, but the sentiment did not necessarily endear him to his neighbors. He regarded slavery as "the mightiest serpent that ever infested the world," blaming it not only for the South's retarded pace in industry but for the indolence among whites and degradation among blacks.

A slave owner by birth, he spoke and worked publicly against the "peculiar institution," freeing a number of his slaves during his lifetime, after giving them enough education (his wife, Mary, conducted classes) to help them survive as freedmen in the iniquitous city. After the further importation of slaves was banned he offered one of his properties, Smith's Island, Virginia, as "a refuge for poor Africans" (slaves who had been taken off a captured slave ship) until they could go back to Africa under the aegis of the new African Colonization Society. But he was a gradualist, not an abolitionist. At almost any cost he wished to avoid the confrontation that might destroy the Union.

He was just spared having to endure in extreme old age the Civil War that tragically resolved these issues. It was as a result of the war that the area beside his house became a National Cemetery, which set the white crosses marching up the green, surrounding slopes of Arlington House. Because Lee also hated slavery, but could neither bring himself to fight against his fellow Virginians nor yet remain inactive, the war eventually linked Custis' house (as the Lee Mansion) with the defense of secession.

This would have saddened Custis. So would the fact that most of his personal papers and part of his Washington collection were lost or scattered during the war. Things were stuffed into the attic when Mrs. Lee went south in the spring of 1861. The war was heating up, and she could not take much with her. Union soldiers took over Arlington House and gradually items began to disappear. Perhaps the most interesting temporary loss was Washington's punch bowl, with a full-rigged frigate painted on the inside. At Arlington House parties, when the young people had drunk the punch down to the frigate's hull, Custis, genial as always, but as always pretty abstemious, used to pack everybody off to bed.

Viewed from above, the mansion sits surrounded by the encroaching crosses of the Arlington National Cemetery. It was made a burial ground in 1864; the government wanted to be sure the Lees never returned.

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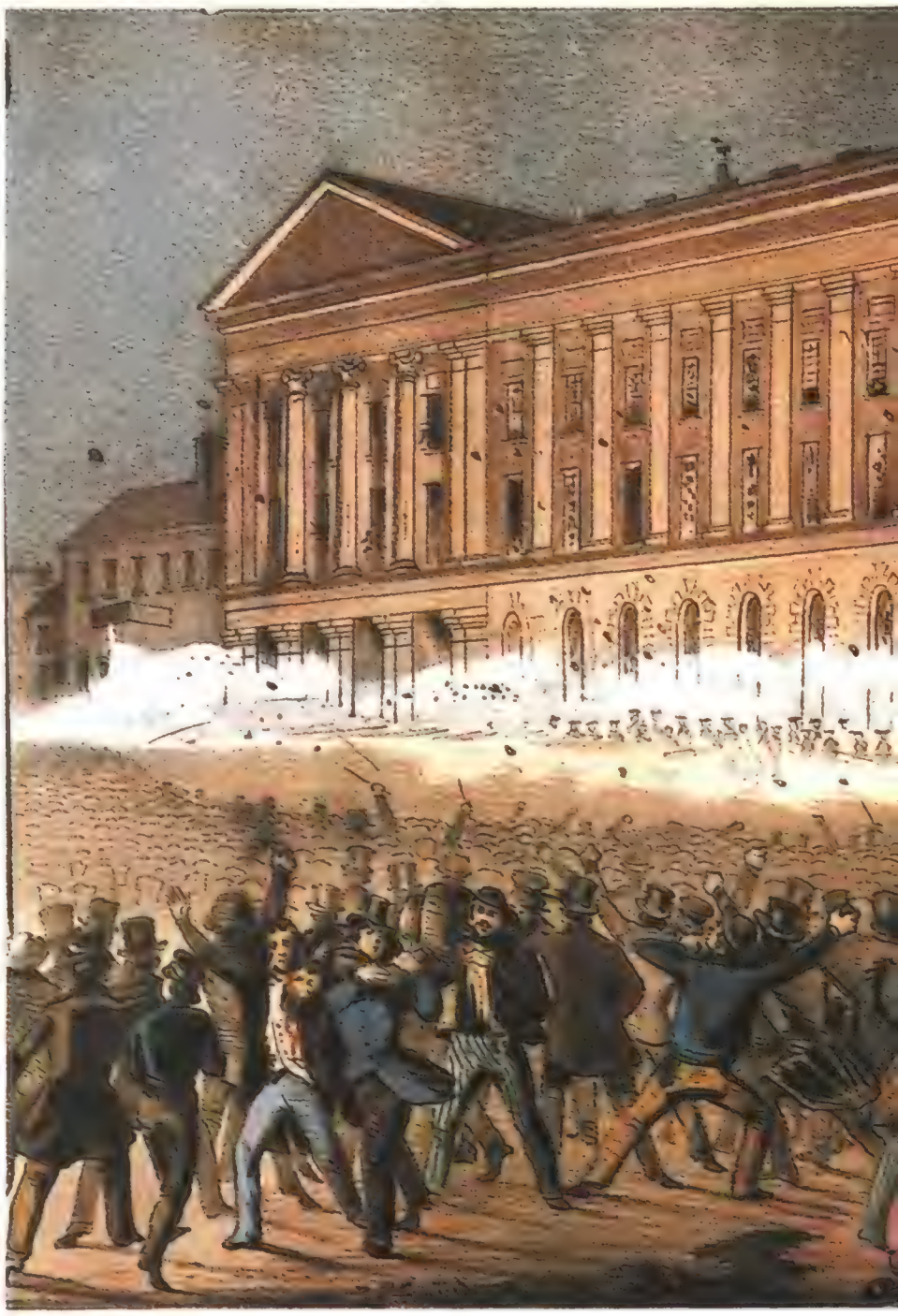
Mr MACREADY AS MACBETH.

It was Charles Macready's Old World histrionics that stirred his rival, Edwin Forrest (opposite), to hisses.

During the riot that resulted from the actors' feud, bricks, bullets and curses filled the night air.



By Jack Fincher

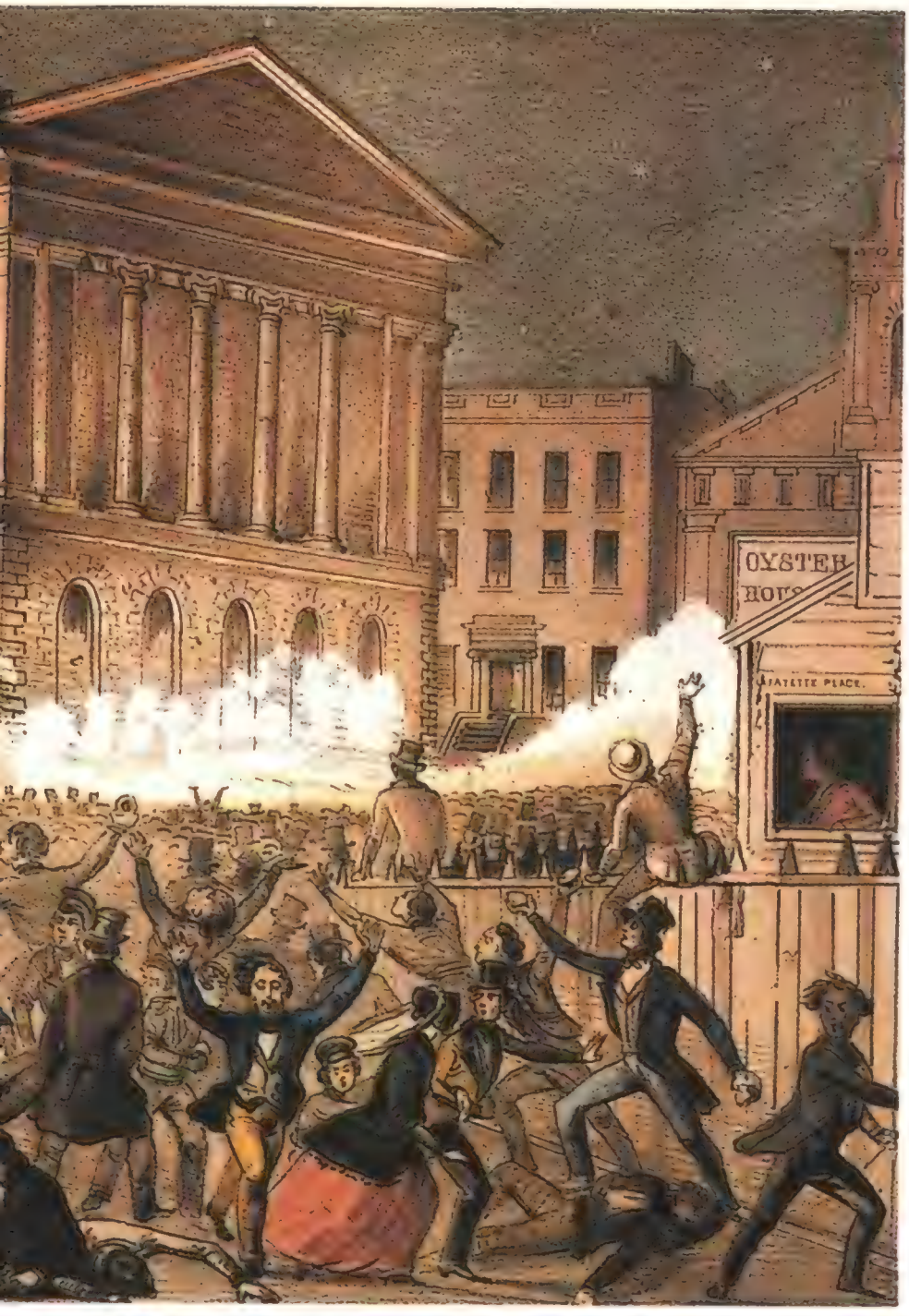
Raising the curtain on a bloody riot and stark mayhem

In the turbulent Manhattan of 1849, a feud between two well-known actors led to a fight—and to scores of dead and wounded

The crowd was roaring: "Burn the damned den of the aristocracy!" An angry mob pressed forward at the ragged line of 100 soldiers still holding their ground despite a wounding rain of rocks, bricks and curses. One man in the crowd waved a sword and yelled out: "Workingmen, shall Americans or English rule? Shall the sons whose fathers drove the baseborn miscreants from these shores give up their liberty?"

The rocks flew faster, the shouting rose in volume as the crowd closed in. A great brute of a man, poised to hurl a heavy paving stone, stopped suddenly in the white heat of the moment. Sticking the stone between his knees to free both hands, he seized his red flannel shirt and savagely ripped it apart to expose his bare chest. "Fire into this!" he bellowed at the line of armed men. "Take the life out of a free-born American. . . . Do it, Ay, You darsn't."

It was the night of May 10, 1849. Before the evening was out, many men lay dead. For these are scenes from one of the bloodiest riots in New York before the Civil War. It was a riot that would prove, if proof were needed, that passions can kill. But, one may ask, pas-



As heroic Spartacus, the role he played the night of the tragedy, Forrest shows off his New World muscle.

sions over what soul-stirring issue? The abolition of slavery? Joblessness and poverty?

Both were issues of the day, but neither of them caused the Astor Place riot. The conflict was fueled by one of the world's most unmanageable forces—the amour-propre of prideful actors—and mightily exacerbated by the onstage waving of a single handkerchief in far off Edinburgh. The riot came about, in fact, over the momentous question of who was the better performer, Edwin Forrest, the burly American idol, or the elegant Charles Macready, Britain's most celebrated stage actor.

Of course, the theatrical times were turbulent. According to Richard Moody who has written a book about the riot, English-speaking actors on either side of the Atlantic were accustomed to rowdy, drunken patrons who made their displeasure volubly and often violently known—about everything from the cost of tickets (the average seat at the Astor Place Opera House went for one dollar) to the play's content and the nationality of its performers.

Shows tended to be classical, uplifting or hortatory, running most frequently to Shakespeare and productions of heroic revolts against oppression like *The Gladiator*, in which Forrest as Spartacus practically made a lifetime thespian career. Actors who displeased were sometimes greeted onstage with flying objects that ranged from chairs to rotten fruits and vegetables and even scissors. In the audience itself a careless sneer or an imagined slight could result in wholesale fighting, the slashing of furniture and draperies, the smashing of mirrors and musical instruments, the shattering of chandeliers. On one occasion, benches were torn up when an actress failed to appear. Even the great Edmund Kean was once driven from the stage by "mobocratic rowdies" throwing "a fusillade of missiles both hard and soft."

Until that fateful night at Astor Place, though, no theatrically stirred violence of such magnitude had occurred on either side of the Atlantic. Or would again. What, in the name of civilization and sanity, had happened?

One clue to the tragedy that followed can be seen in the list of occupations of the 146 men who were

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eventually arrested: a roll call of butchers and machinists, printers and railway porters, sailmakers and marble cutters, plumbers and shoemakers. These Bowery B'hoys, as they were known, *were* regular theater patrons, but not ordinarily at the Opera House in Astor Place. But then, in mid-19th-century New York City, times were not ordinary. Lured by the California gold rush or driven by the potato famines in Ireland and the 1848 Revolution throughout Europe, tens of thousands of immigrants were flooding into New York in what has been called "the motliest concentration of migrating humanity ever seen."

Working-class New Yorkers—those with the most to lose in job competition—were convinced that the dregs of the Old World had been dumped on the New to take the bread out of honest men's mouths and serve as an unwanted tax burden. In the case of German and Irish Catholics, the new arrivals were also seen as an insidious beachhead for the Vatican. The native-born were ripe for any budding political movement that capitalized on their fear of things foreign. In the

Early in the evening the crowd attacked theater with sticks, stones and bricks.

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1850s, such a movement would evolve from a collection of brawling street gangs into the Know-Nothing party. An informal federation of plug-uglies, its members sometimes stalked the polls with shoemakers' awls attached to their knees for persuading the electorate to "vote American."

But before the Know-Nothings, in 1849 men of their ilk were swept up in a bloody charade no less deadly for being idiotic: a seductively symbolic feud between two actors who embodied life-styles and values that either repelled or attracted partisans like the magnetic poles.

Two more natural antagonists have seldom strode the stage. To some critics Macready was "a man to whom Nature has refused everything, voice, carriage, and face." Forrest, by contrast, was an obsessed physical culturist, a veritable Hercules. "What a mountain of a man!" one actress gushed and Forrest's fans agreed. Macready was a stylized actor, a careful student of stage character, who taught himself to act using remarkable discipline. To keep his acting from being too dependent on flamboyant gesture, he sometimes practiced parts with his hands tied down, facing a mirror, to be sure he did not grimace. Forrest's style was once described as "rant, roar and rigmarole." He was such a scenery-chewing terror that an Englishman in a front box once leaped up and ran into the street screaming, "That damned brute was going to cut down the theater!" A manager annoyed by his star's contempt for the weakness of the stage "warriors" usually pitted against him in fight scenes hired six street toughs as walk-ons to maul Forrest. The young actor caught on. Charging into them, he knocked their heads together and pitched one into the orchestra pit.

Macready, an Old World sophisticate, had a genius for upstaging other actors. "When he played Othello," a fellow member of the cast explained, "Iago was a mere *stoker* whose business it was to supply Othello's passion

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During a brief lull in the fighting, rioters carted their wounded away in wagons.

with fuel. The next night, perhaps, he [played] Iago and lo! presto! everything was changed. Othello was . . . a puppet for Iago . . . a mere fly, a large *blue-bottle*, struggling in the meshes of the Italian spider."

Forrest did not bother with anything as subtle as upstaging. A supporting actor who incurred his displeasure was once greeted with: "You are a butcher by trade, are you not?" When the poor fellow protested that he was an actor, Forrest grabbed him by the collar and held him out at arm's length. "An actor! You are not, sir; you are a butcher. Go resume your calling, kill sheep, kill oxen, kill asses, if you must, but never kill Shakespeare more."

More important to what transpired at Astor Place, both men were outrageously nationalistic about the theater. During a Philadelphia performance of *William Tell*, Macready once upbraided a property man for supplying him with arrows of "inferior American quality." Rudely

A frequent contributor, Jack Fincher has lately written about research connecting light and health (June).

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It is Deaton's attention to detail and accuracy to nature for which his works are especially prized. Long before beginning to sculpt, Deaton studies his animal subject in the wild, photographing and sketching many poses and settings. Only after choosing the best posture in which to depict the animal, does Deaton begin the careful sculpting of his original.

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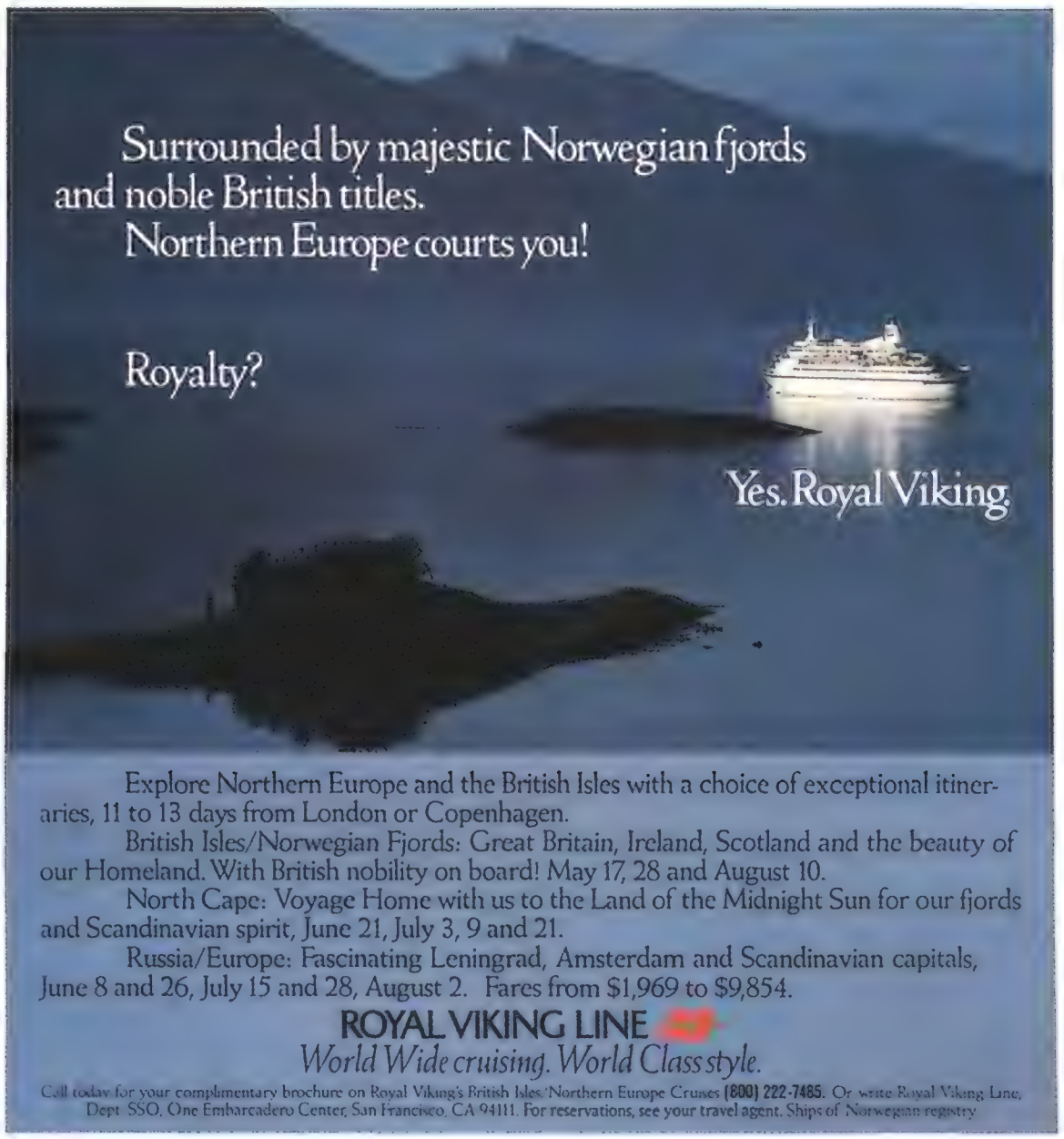

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stated, his attitude was that the American "masses, rich and poor, are essentially ignorant and vulgar—utterly deficient in taste."

As for Forrest, he believed in the American frontier and resented the affected influence of English actors on the American stage. Even his first trip overseas was in some ways a telling parody—not of Mark Twain's Yankee innocents abroad but of the modern American tourist. He dismissed French pageantry, deplored the licensing of Italian beggars and smoked on Moscow streets in defiance of local law. According to one story he even deprecated the roaring of Vesuvius ("Our great Niagara, if run into this thing, would extinguish it in two minutes"). An American, he wrote a friend, "needs to reside in Europe only a few months to know and to feel that his own country is blessed beyond all others."

Forrest first appeared on the English stage in 1836, at age 30. He overwhelmed British critics and audiences alike with his raw prairie power. On his second professional visit nine

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Rabble-rouser Ned Buntline, in buckskin, later wrote novels about Buffalo Bill.

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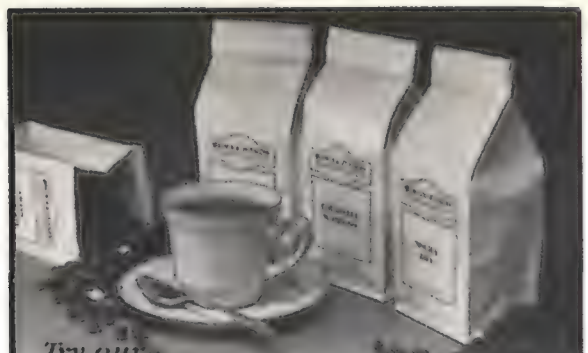

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years later, however, he found it difficult to book a Paris theater (from a friend of Macready's) and had trouble securing two plays he wished from Lord Bulwer-Lytton (also a friend of Macready's). He felt he had been sneered at by England's reigning critic—(*also* a friend of Macready's). In London seemingly well-orchestrated catcalls and hisses greeted the American's rough-hewn technique. Forrest naturally suspected a British conspiracy.

Retreating to Ireland, he was hailed by audiences as much because the hated English had savaged him as because of his own talents. Giddy with a triumph in *The Gladiator* at Dublin's Theatre Royal, Forrest on his curtain call pointedly snubbed the ranking British in their box, bowing instead to the galleries.

The feud reached new heights of passion when Macready appeared as Hamlet in Edinburgh on March 2, 1846. As the gloomy Dane, his mannerisms were very much in evidence. Wrote an actor who that night played Marcellus to his Hamlet, Macready "strutted from side to side, waving his handkerchief above his head in the most extravagant manner. As he uttered the words, 'Of the chameleon's dish I eat, the air, promise crammed, you cannot feed capons so!' a mighty hiss arose . . . like that of a steam engine."

But let Macready himself speak. "I waved the more, and bowed derisively and contemptuously to the individual. . . . It discomposed me, and alas! might have ruined many; but I bore it down. . . ."

Who had hissed? Hear now the High Sheriff of Edinburgh: "Believe me, there was but one hiss—and one hisser. Forrest was the hisser—Forrest's was the hiss."

Macready exploded: "I do not think that such an action has its parallel in all theatrical history," he wrote in his diary. "The low-minded ruffian! The man would commit a murder, *if he dare.*"

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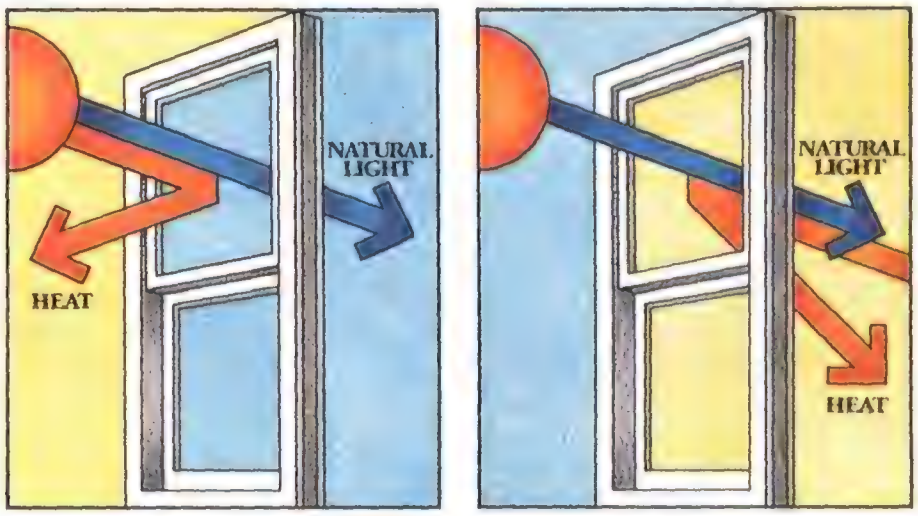

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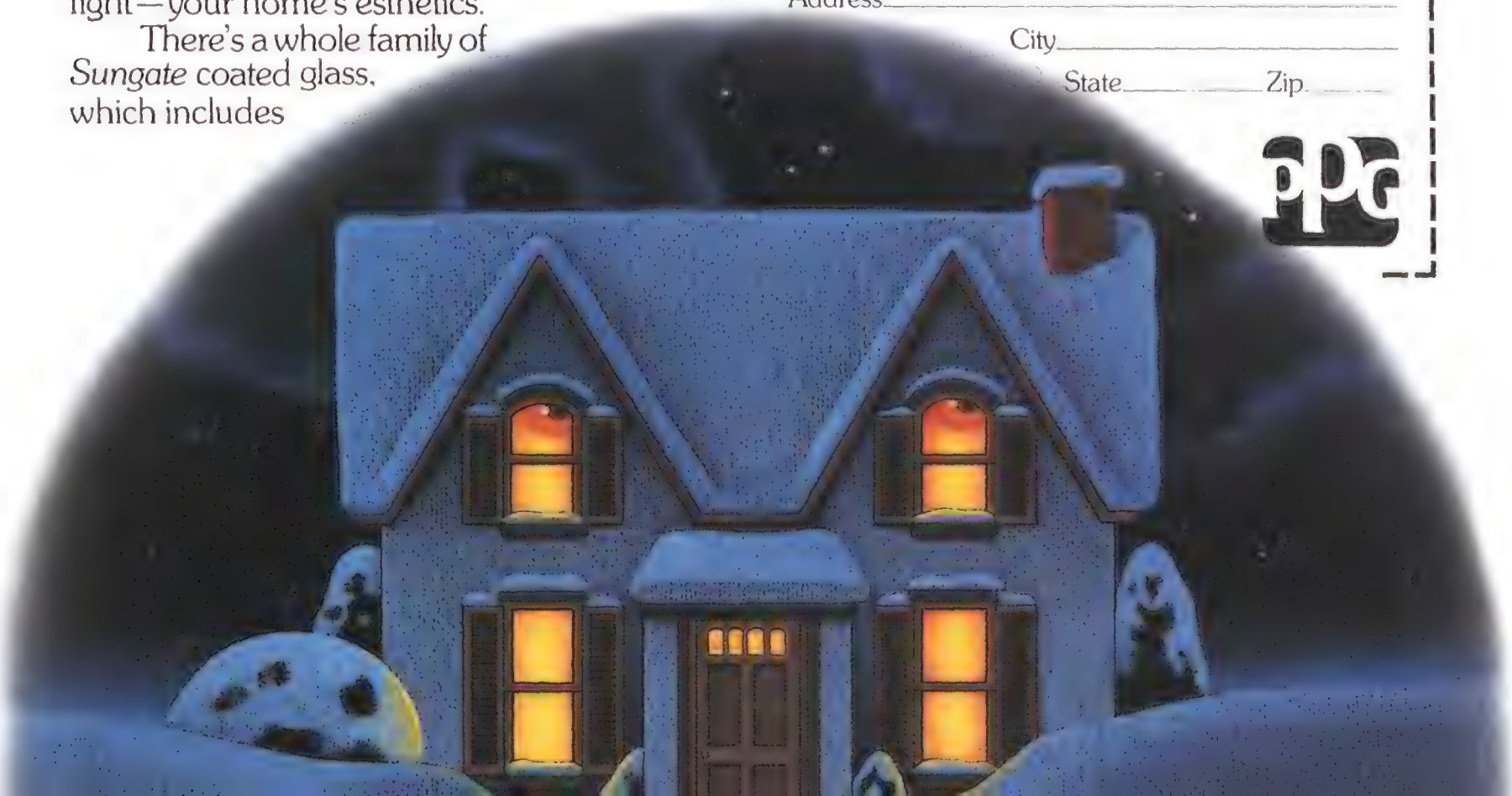

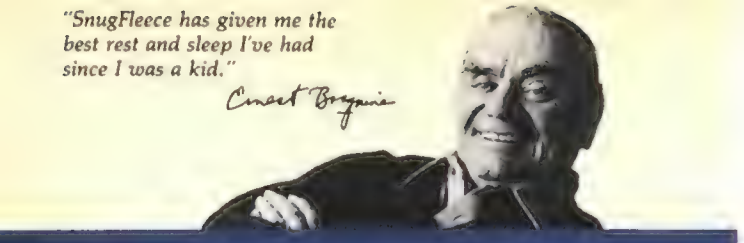

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And what had Forrest to say? "Mr. Macready thought fit to introduce a fancy dance . . . which I thought . . . a desecration . . . this was the only time during the performance that I [hissed]. . . . I warmly applauded several points of Mr. Macready's performance; and more than once I regretted that the audience did not second me in so doing."

But Forrest's criticism was not as mild some time later when he declared: "Mr. Macready connived, when his friends went to the theater in London, to hiss me . . . many months before the affair at Edinburgh . . . he jesuitically remarks that, 'until that act, he never entertained toward me a feeling of unkindness.' Pah! Mr. Macready has no feeling of kindness for any actor who is likely by his talent to stand in his way."

The hiss at Macready's ill-starred *pas de mouchoir* in Edinburgh became, as theater historian Charles Shattuck puts it, a "hiss heard round the world": Forrest returned home a hero. When Macready unwisely followed on tour, he was met in almost every city by his muscular nemesis, who took the nearest theater and performed the same night every role the Englishman played—Hamlet, King Lear, Macbeth. It was a test of popularity the visitor could not hope to win—with the Yankee public or the increasingly nationalistic critics. Forrest, wrote one reviewer, was "a rough jewel of the first water; Macready a paste gem, polished and set off with every counterfeit gleam art could lend. The fire of the American commands honest throbs and tears, the icy glitter of the Englishman, dainty clappings of kid gloves." In Cincinnati half a raw sheep's carcass was heaved on stage.

Macready did not know when to quit. He would beard his rival on the latter's own turf, by opening in *Macbeth* on May 7 at New York's new Astor Place Opera House. Forrest scheduled *Macbeth* for *his* appearance that evening just a mile away.

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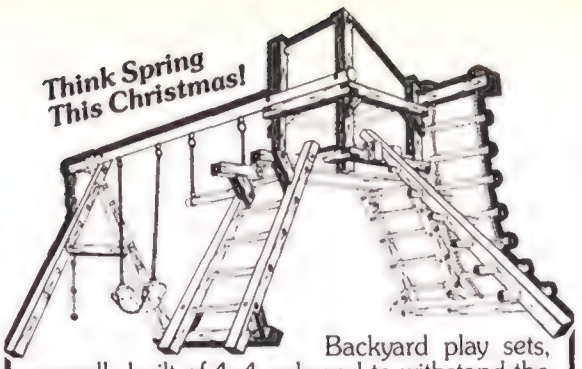

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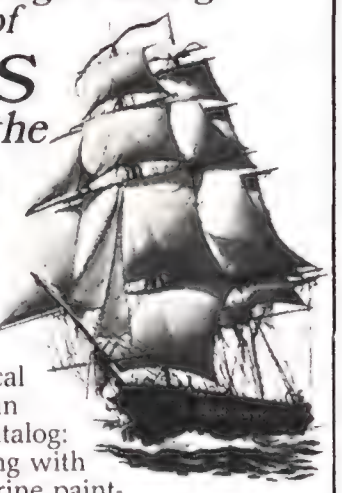

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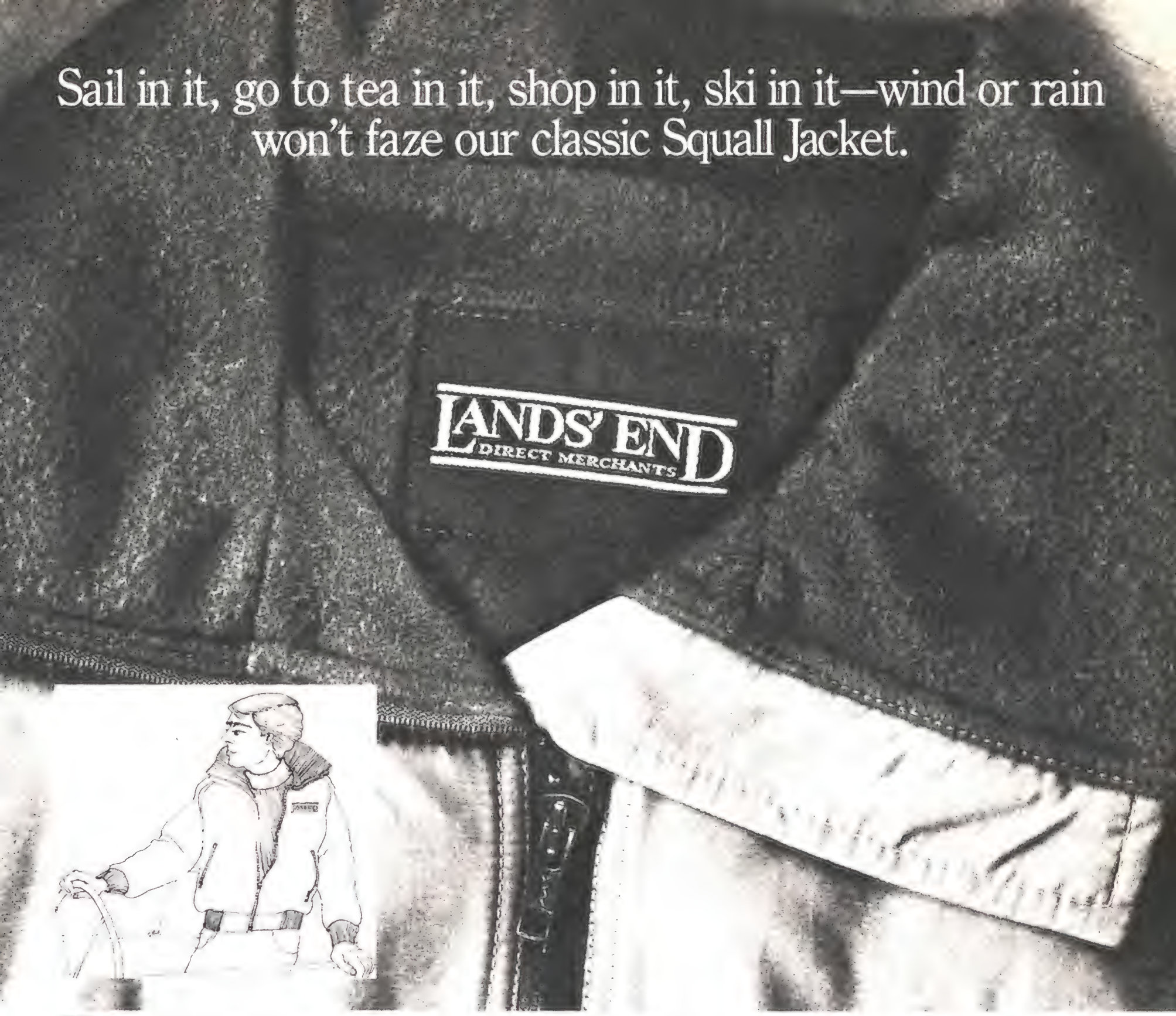

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Beyond that, you could pay up to $96 or so for a jacket like this in a sporting goods store specializing in high tech outerwear. But in our traditional pattern-breaking way, Lands' End has found ways once more to marry top quality with a palatable price. We offer all this handsome lightweight warmth and comfort for only $69.00. And in youth sizes, just $54.50.

A classic, inside and out. The outer shell of this waist-length jacket is a tough tri-blend of cotton, nylon and polyester—the blend we've found most certain proof against both wind and rain. The inner material is a soft, lightweight bunting—brushed on both sides to maintain loft. (Bunting is as close as mortal man can come to imitating wool fleece—and a credible effort it is, too!)

And note this: the full-length inside storm flap of our jacket is tucked *beneath* the smooth-running zipper . . . to keep the wind from whistling between the teeth of the zipper as it can on ordinary jackets. The Squall has fully-lined sleeves, zippered hand-warmer cargo pockets, a high collar that protects neck and chin, even a zippered inside pocket for your keys and I.D. All this, and it's machine washable.

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Posing in middle age as Coriolanus, Forrest displayed his famous physique.

Trouble struck on opening night. As Macready reports in his diary, "My call came; I heard immense applause and three cheers for . . . Macduff. I smiled and said to myself, 'They mistake him for me.'" Not so. As he stepped onstage the rising applause mutated into a crescendo of groans and hisses. A local prizefighter hung out a broad banner calling Macready a liar. Rotten eggs, old shoes, copper coins, assorted fruits and vegetables rained down act after act as first Macready, then the cast, sought vainly to speak and be heard in what became a roaring dumb show.

Smiling grimly, the stubborn Macready held his ground, even when a bottle of stinking asafetida splashed his costume. Then a quartet of chairs sailed out of the upper tier and clattered into the orchestra pit and onto the stage, narrowly missing the actors and sending the last musicians scurrying. Macready bowed and, going up to the manager, observed that he

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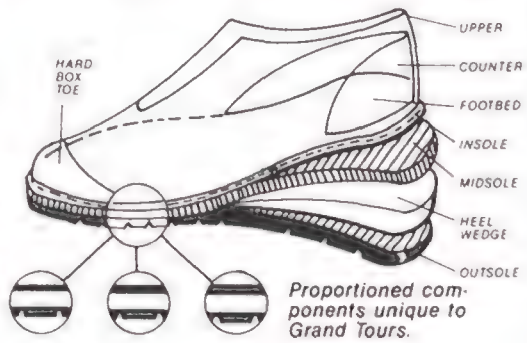

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thought that he had quite fufilled his obligation and should "remain no longer." Cries of "Three groans for the English bulldog!" "Nine cheers for Edwin Forrest!" and "Huzzah for native talent!" rent the sulfurous air. A memorable evening of American theater was over.

Macready wisely decided to quit the country by the first boat. But, alas, a letter signed by 47 prominent Gothamites including Washington Irving and Herman Melville flattered his vanity fatally. He would stay and show the scoundrels. *Macbeth* was scheduled again for Thursday.

That day a flood of handbills appeared: "Workingmen! Shall Americans or English rule in this city? . . . We advocate no violence but a free expression of opinion to all public men!" The handbills bore the imprint of the American Committee, an umbrella emblem for the several societies that advocated "America for Americans," and, according to Moody, were actually the inspiration of "Ned Buntline," future author of

At 57, in his farewell address, Macready demonstrated characteristic restraint.

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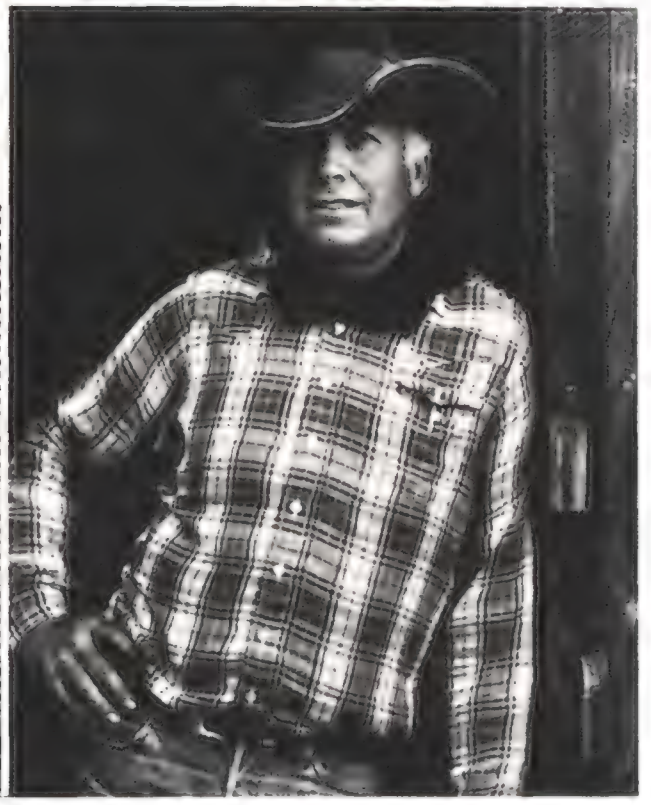
the popular Buffalo Bill novels—a jingoistic New York editor whose real name was E. Z. C. Judson. To Buntline's faction, the Opera House was the odious flagship of the Anglican elite, cultural and social rulers of Manhattan. Macready offered an irresistible opportunity to embarrass them. Buntline raced around town in a wagon all day, mustering support and rallying his forces, to "express their opinion . . . at the English Aristocratic Opera House."

When the theater owners, rejecting Buntline's threats, balked at closing the house (and turning back receipts), alarmed city officials ordered out 325 local policemen and alerted 200 members of the Seventh Regiment armed with 1,500 rounds of ball cartridges and two six-pound cannons shooting grape and canister shot. By curtain time Astor Place was so jammed and bristling with armed men that many of the sold-out house of 1,800 ticketholders failed to fight their way to their seats, kid gloves and white vests or no.

Macready went on—to bedlam. "The wretched creatures . . . shook their fists violently," the indefatigable diarist wrote, "and called out to me in

Elegant Macready style was caricatured as Hamlet, one of his most famous roles.

Here's to the dreamers.



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savage fury, I laughed at them, pointing them out with my truncheon to the police. . . . At the end of the fourth [scene] police rushed in . . . upon the scoundrels . . . and seemed to . . . bundle them in a body out of the center of the house."

It was then that the bombardment outside began. Volleys of bricks and paving stones (from convenient street construction nearby) smashed through the windows and shattered the grand chandelier. Outside the police were pinned against the building. But a platoon of their fellows charged out of the theater and drove back the attackers, arresting a handful and locking them in the theater basement. Some in custody tried to set fire to the theater but fortunately were unsuccessful.

Outside the mob now began battering in the entrance of the Opera House. The place "resembled a fortress besieged." Twenty policemen had been injured already. Inside, tense city officials conferred quickly, then agreed. It was time to call in the New York State Militia.

As the third act opened, the Militia was summoned by messenger from the Artillery Drill Rooms downtown. Fifty mounted troopers rode into Astor Place. According to Moody's meticulously detailed account of the battle, the hail of stones became so steady that almost all the cavalry were hit or hurt. Horses reared uncontrollably. Forced to dismount, the troopers gave way to the infantry. Advancing with fixed bayonets, soldiers on foot cleared a circle around the Opera House—only to find the mob pouring back in their wake. A fresh fusillade of stones cut a swath in the Militia's front rank. Convinced the military would not fire, rioters grew bolder, pushing the troops back against the wall of the theater.

Mayor Caleb Woodhull now arrived. A Militia general named Hall, blood running down his face, pleaded for permission to fire "or my men will all be killed." Barely a hundred able-bodied defenders now stood between

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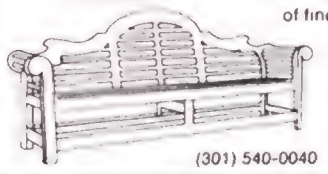

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the theater and a crowd of at least 10,000 people. Woodhull had been in office only two days. "Wait a little," he said, and left.

So close had the mob pressed that the soldiers no longer could flourish their bayonets; their muskets were being seized by the barrels. The awful decision to shoot fell to the sheriff, who made it. Shouting at the rioters to disperse or be shot (in the noise and confusion of rock rattling against gunmetal few if any heard or believed him), he directed the first salvo to be discharged harmlessly over their heads against the brick walls of a house across the street.

Shots peppered the facade and fell to the ground "flat as pancakes," writes Moody. At the deafening sound, the mob stopped shouting and withdrew toward the Bowery—until they realized no one was hurt. "They've got leather flints and blank cartridges!" someone yelled. Back they surged.

"Don't hit above the legs!" General Hall screamed to his men. Another deafening report rang out; a dozen bodies fell. Retrieving its dead and wounded, the mob charged again. "Fire! Fire! Fire!" commanded the General. This time the men aimed chest-high. The fan-shaped blast cut a 150-yard swath through the crowd.

Innocent onlookers, curious folk descending from streetcars, even a woman in her bed in a cottage across the way, were pierced through their chests, heads, cheeks and necks by the hail of lead. But the blast broke up the riot and, although in shambles, the theater was saved.

At least 22—by some estimates as many as 31—people died; more than 100, including police and soldiers, were wounded. Of the 146 rioters arrested and jailed, 136 were released for lack of evidence. The ten who stood trial got prison terms ranging up to a year. Ned Buntline's was the stiffest sentence. He served one year on Blackwells Island. Released in September 1850, he rode back into the world with Presidential style: in an open carriage behind six white horses to a brass-band rendition of an unprophetic "Hail to the Chief."

And Macready? Disguised in the cap and coat of another actor, he had mingled with the audience and escaped, walked to a friend's house, hired a carriage to New Rochelle, caught a train to Boston and 12 days later sailed for England, never to return. The final entries in his diary were his lasting legacy to the evening: "An omnibus drove furiously down the street, followed by a shouting crowd. . . . 'What was the matter?' [asked his friend] and one answered, 'Macready's in that omnibus; they've killed twenty of us, and by G— we'll kill him!' "

"I felt depressed and rather low," Macready reported, "but . . . determined to do my duty, whatever it might be, acting or suffering."

And where was Edwin Forrest all this time? Why, starring that night as Spartacus in *The Gladiator*. Though the authorities urged him to close in the interests of law and order, he had insisted the show must go on.

The riot's tragic climax, depicted in a contemporary illustration, came when the beleaguered militiamen finally fired into the crowd.

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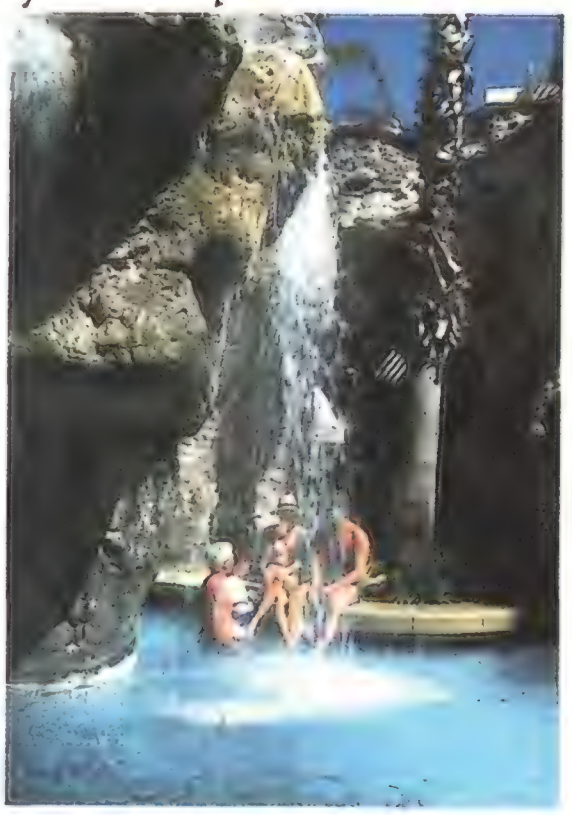

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When you realize what gold can do, you'll know why dentists use so much of it.

It is almost beyond belief, this scene from the Middle Ages. A fire burns in a dark corner of a room. At the other end sits a toothache victim with an open mouth. Bending over him, a man pours into the cavity in his tooth a molten lead alloy. You can imagine the ensuing sound effects.

Things were better farther back, in the 6th century B.C., when in Italy the Etruscans practiced the art of wiring loose teeth together with strips of gold. The ancient Greeks and Romans also used gold in their crude prostheses.

Ancient Etruscan gold bridgework still gleams like new.

But only recently, in this century, has the use of gold been perfected with the high-quality restoration of teeth.

The breakthrough came in 1907 with the development—or rather rediscovery—of the "lost wax" casting process by the American dentist, W.H. Taggart. For example, a crown or inlay is first carefully shaped out of wax. It is then surrounded by a heat-resistant plaster. After the plaster hardens, it is heated and the wax melts out of it. Into the resulting hollow is poured molten gold alloy. Upon cooling, the plaster is broken open, leaving an exact duplicate of the restoration in gold. This, very much simplified, is the way gold crowns, inlays and other dental restorations are molded.

Another breakthrough occurred in the 1950's when porcelain was developed that could be fused to gold alloys, making it possible for artificial teeth to look absolutely natural. The gold is not visible in the finished restoration.

In this and other ways, more than twelve *tons* of gold were used in 1984 by U.S. dentists.

What is it that makes gold so useful?

It will not corrode or tarnish in the mouth. It has no injurious effect on gums and other tissues. It takes a high polish. It is malleable and can be shaped easily without breaking. Being malleable, it can be made to fit tightly around the edges of a cavity, sealing it perfectly. It won't fracture under the powerful pressures of biting. And gold is everlasting.

Taggart's original machine for high-precision casting of dental gold.

Today, standardized gold casting alloys are available with different hardnesses, melting points and expansions. They give the dental laboratory technician a lot to work with. For instance, he can select gold alloys in various hardnesses depending on the job they have to do.

Though the price of gold has increased over the years, the main cost in dentistry is labor and services, not metal. Only small amounts of gold alloy are used in restorations, typically one-twentieth of an ounce or less in the average crown.

Cheaper, base-metal alloys have been developed to replace gold, but gold has unsurpassed reliability. Some are even suspect: there is particular concern about the toxicity of nickel, which is used in certain of these alloys. Other problems such as miscastings, discoloration of teeth, and inadequate adhesion to porcelain are more frequent with these substitutes.

No metal is more trustworthy or has a longer history of use in dentistry than gold. Instinctively we know how precious gold is; it has been prized as jewelry since ancient times. But gold is even more precious when it is the jewelry of the mouth, for nothing is more precious than one's health.

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This advertisement is part of a series produced in the interest of a wider knowledge of man's most precious metal. For more information, write to The Gold Information Center, Dept. S15, P.O. Box 934, Madison Square Station, New York, N.Y. 10010.

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The Gold Information Center

By Robert Wernick

The singular vision of a reincarnated Victorian millwright

With a fondness for old machines, restorer Robert Johnson has devoted his life to their tender, loving care

Johnson polishes a classic 1880s saw-gumming-and-grinding machine. About one-third of it is not shown here because he is still restoring that portion.

More than ten years ago, the Smithsonian planning committee for "1876: A Centennial Exhibition" called on master craftsmen around the country for help with the section of the show devoted to working machinery. But one major item they wanted to include, an 1870 Mast, Foos & Company windmill, posed a problem. "There didn't seem to be a single one remaining in rural America," says curator Robert Vogel, who heads the Museum of American History's Mechanical and Civil Engineering Division. "And we couldn't locate an old set of plans, either." All they had was an old trade-catalog engraving that showed the windmill in a bucolic setting, with cows grazing in the foreground.

What the committee needed was a Victorian millwright—someone who had reassembled so many 19th-century machines that, with only the engraving as a guide, he could reconstruct the windmill's internal workings and build a replica. So the committee put in a call to master restorer Robert Johnson in Rossville, Georgia. And of course he said yes.

Robert Johnson's earliest memories are of prowling through old quarries and abandoned brickyards, staring at the metal fragments left there to rust. His life got its definitive bent on his sixth birthday, when he was given an Erector set. In 1945, when he was eight, he won a national prize for an engineering construction—a working model of an aerial tramway—though he was penalized for using obsolete parts from pre-1945 sets. By the time he was 12 he had 15 sets. He was in love with the limitless possibilities of this toy, the way you could put together the all-metal girders and rods and wheels to create mine tipples or drawbridges or what you will.

They don't make all-metal Erector sets anymore: the contemporary version includes plastic parts disdained by purists. Today, the modern machines of our post-industrial age are apt to be mysterious and arcane—complex circuitry hidden under sleek gray or beige skins, housed in sanitized rooms. What Bob Johnson loved as a boy, and loves to this day, are the

Photographs by Thomas S. England

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Millwright Johnson had nothing more than a 19th-century illustration to work from as he constructed replica of windmill with bucket-shaped blades.

elegant stationary steam engines of the 19th century and the machines they drove. "There was this Victorian notion that machines should be both functional and beautiful," says Johnson. "There was no such thing as planned obsolescence, no compromise with materials or quality. Because of that, these old machines can be restored and put back into working order."

As Johnson visualizes those days, men worked in a cacophony of whirring overhead belts, smoothly gliding pistons, softly hissing steam. It was hard work, but a certain breed of worker loved their machines, many of which were painted in bright, proud colors. This was the kind of man who carried a rag in his hip pocket, and when he was passing by his charge he would automatically stop to rub its spotless surface or brass fittings. It didn't improve the efficiency of a steam engine if its outside was polished, but that stroke of the rag was a gesture of pride. Never before or since, Johnson insists, has Man lived in such harmony with his own creations.

One of Johnson's favorite Victorian mechanics was the prolific inventor L. S. Starrett, a Maine native who settled in Athol, Massachusetts, in the 1860s. Starrett had observed the motion of the walking beam that conveyed power from the steam engine to the paddlewheel in side-wheel steamboats. He adapted its principles to make a meat chopper that he patented in 1865. Johnson has collected several versions of the chopper, ranging from a small hand-powered type for use in home kitchens to a belt-driven model for grinding pounds and pounds at a time in restaurants or institutions. You can see them lined up in a workshop on the Johnson goat farm in Rossville, Georgia, just across the state line from Chattanooga.

Bob Johnson was born in Chattanooga in 1937, and the main reason he lives in Georgia, he says, is that the dairy lobby has kept an absurd law on the books making it illegal to sell raw goat's milk in the state of Tennessee. Bob, his wife Mary Ellen and his daughter Nancy have been passionate goat lovers for years; they once pro-

Robert Wernick writes frequently for SMITHSONIAN, *recently on cyclorama paintings, sculptor Camille Claudel.*

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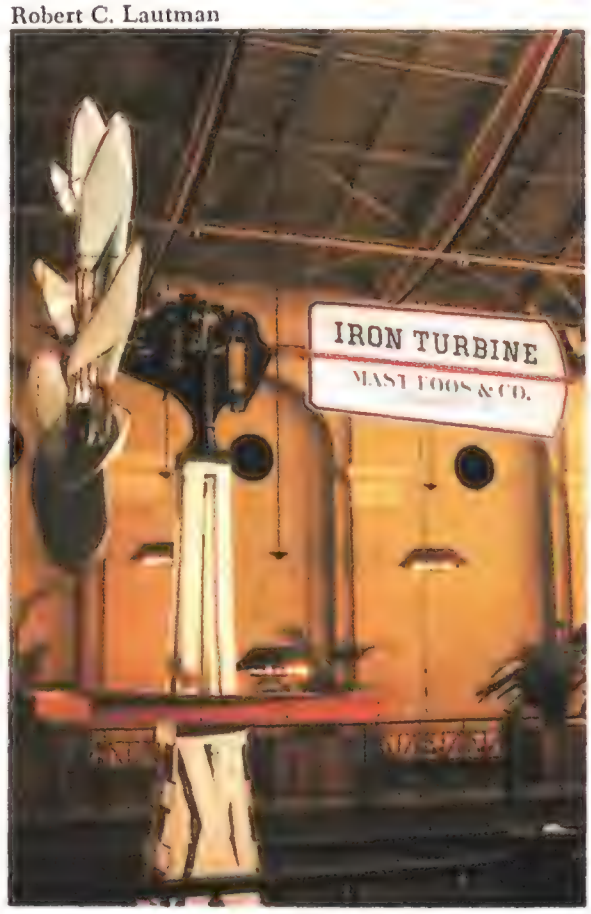
duced a monthly magazine with a national circulation, and they miss no opportunity to propagandize for these sweet little beasts and their products. They keep a herd of about 200 miniature and dairy goats, both for their milk and as part of research projects in conjunction with several universities. It takes a computer to keep track of all the goats' breeding lines, which 21-year-old Nancy manages between her studies in computer programming.

The Johnsons know all their goats by name, and some of them by voice. When you are talking to Bob in his living room, you may hear a pitiful bleat outside the window and he will say, "Don't pay attention, that's Daisy Mae, she's a professional beggar." Mary Ellen and Nancy have sat through many a night feeding infant kids with eyedroppers because their mothers have refused to nurse them.

Taking care of 200 goats may be considered full-time work by some, but the Johnsons also deal in rare tropical woods. These are woods like African blackwood, satinwood from

Robert C. Lautman



Johnson's replica of 1870s windmill stands today in Smithsonian Institution.

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Orphaned and sickly, eight-week-old Isaac gets special care in kitchen "goat chair."

Sri Lanka, pink ivory from Kenya, snakewood from South America, all richly hued, some hard as rock, in great demand by sculptors and woodworkers. Many of these woods have been off the market for years because the tropical forests where they grew have been overcut. The Johnsons bought 160 tons, the total antique stock of an importer in New Jersey who was going out of the business a few years ago. They have about 60 left.

Yet goats and exotic hardwoods are only sidelines for Bob Johnson. His true vocation lies elsewhere. Though his ancestry is impeccably Southern, he was born with the soul, the energy and the restless idiosyncratic curiosity of a Yankee tinker.

Johnson has been picking up old machines ever since he first found himself with a little extra cash in his pocket. It wasn't anything he learned at school. "All those chemistry classes and physics classes were dismal," he says; "I had to find what I was interested in by hounding the libraries and antiquarian bookstores." He started out by dissecting mechanical objects around the house, fixing clocks or using his allowance money to add to his growing tool collection. Once he was

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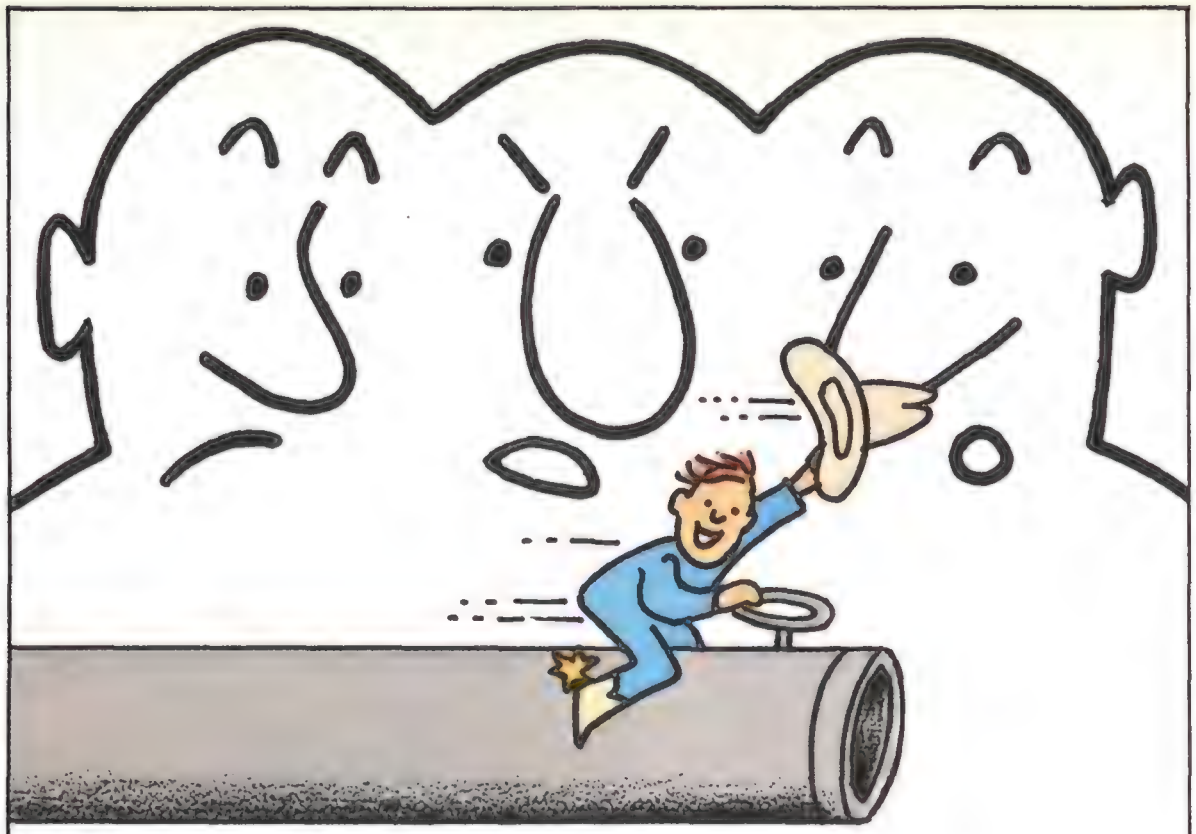

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old enough to drive, he discovered abandoned factories and scrapyards.

Meanwhile, the intrepid 12-year-old discovered another interest of his life. Bob's mother had already insisted he learn to play a musical instrument, so he had chosen classical mandolin. It was OK, he says, but one evening while he was flipping the dial on the living-room radio, a tune by Lester Flatt and Earl Scruggs suddenly blared forth. "I had never heard bluegrass before; I'd never even heard a five-string banjo," laughs Johnson; "I was just freaked out." In characteristic fashion, he immediately bought an old secondhand banjo and all the bluegrass records he could find, and taught himself to play.

This led the way to his first long-term profession; but, says Johnson, it was really a way that he could afford to keep up his love affair with old machinery. From his late teens to his mid-30s, Bob Johnson was a part-time professional musician. You can hear him on an old and rare record, leading his own bluegrass band (Bob Johnson and the Lonesome Travelers): "Cotton is down/ To a quarter a pound/ And I'm busted."*

Later, for seven years, he was an

Disassembly of four-ton agricultural boiler is first step in its restoration.

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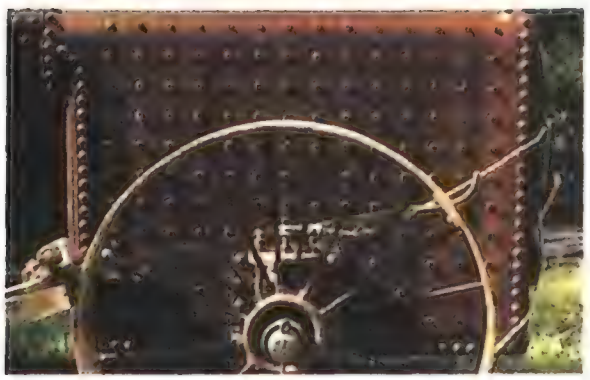

Projections on the firebox of portable agricultural boiler (below) are staybolts.

arranger and instrumentalist for Johnny Cash. You can hear Johnson picking his banjo in the background as the master sings old classics like: "Mister Garfield's been shot down, shot down, shot down./ Mister Garfield's been shot down low."**

Johnson's night world was the concert-hall circuit of country music, the barns and the pavilions and the stadiums and high school auditoriums, the long rides over the hills, the tables set up with whiskey bottles in lieu of a cash fee for the musicians. By day, he'd lose himself in the countryside in search of aging mechanical treasures. It was in Wallingford, Pennsylvania, that Johnson met Mary Ellen Hamilton, who had organized that night's concert. It so happened that she loved to hike abandoned railroad tracks.

As soon as Bob and Mary Ellen were married, he cut back to doing only studio work in Nashville, working as a "sideman" for recording sessions; this gave them more time to seek out old machines. "We had a sort of extended honeymoon," says Mary Ellen. "I think we restored or repaired nearly every upright piano in western North Carolina."

It was 14 early-20th-century Violano-Virtuosos (each packed in its own enormous crate) that brought it all together for the Johnsons. "An opportunity of a lifetime," says Bob; "we just had to buy them." A Violano-Virtuoso is a mechanical musical instrument that includes both a piano and a violin, which nests in front of the piano, its strings stopped by small mechanical fingers and bowed by

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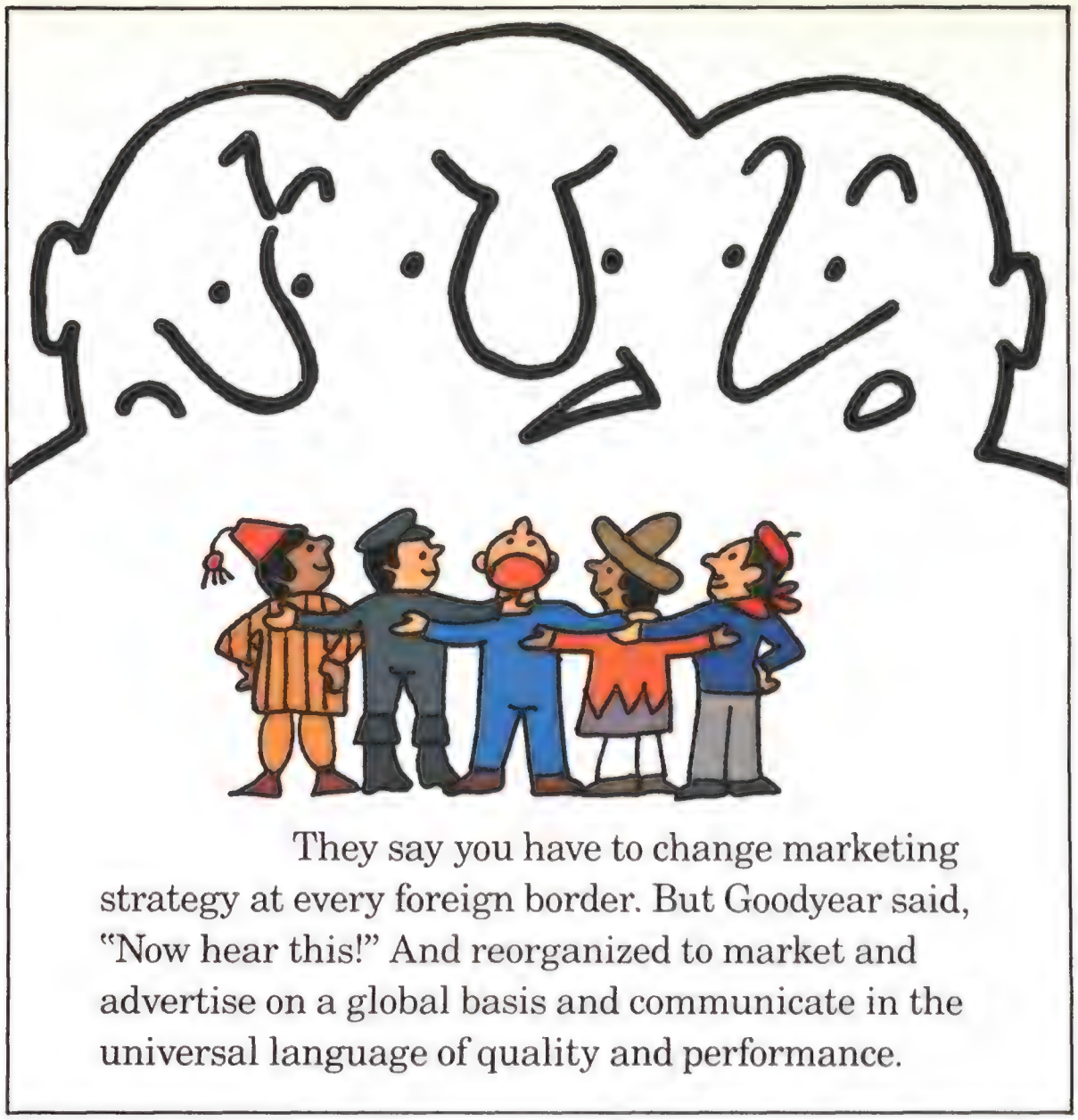

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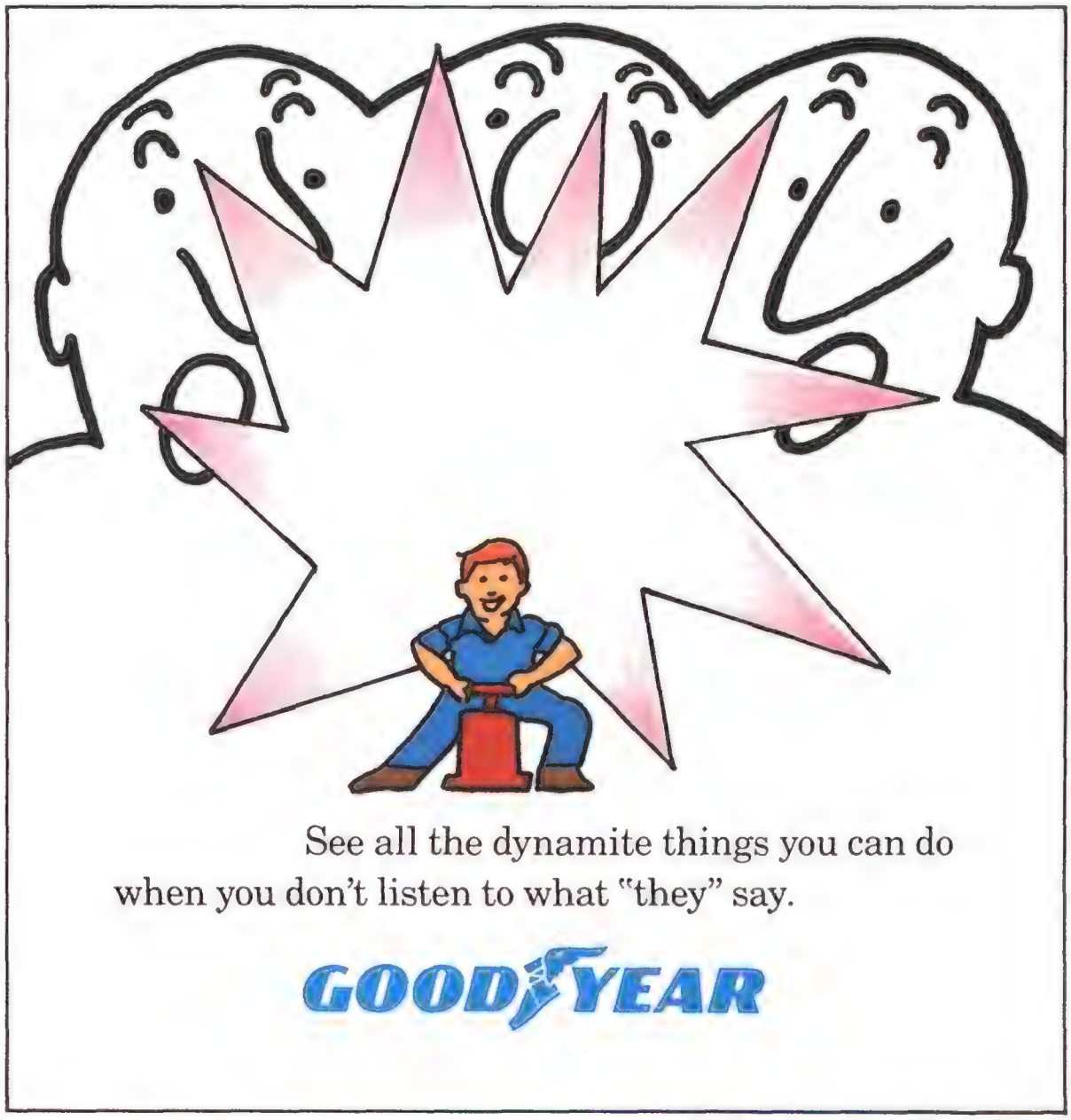

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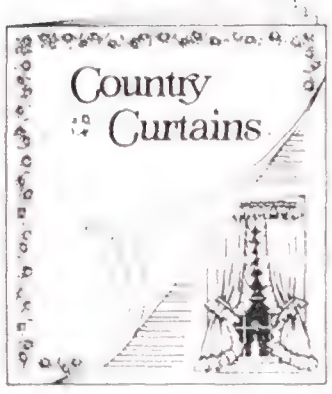

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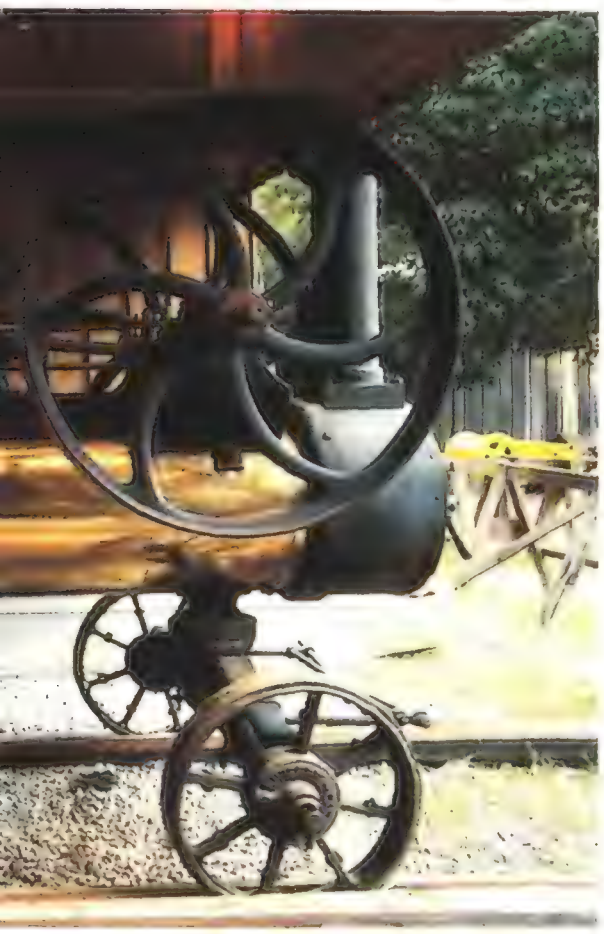
rotating celluloid disks. Johnson couldn't resist the challenge of restoring them. Renting space in downtown Chattanooga, they bought the whole lot and looked for a place to settle down. "We found these 18 wooded acres south of Rossville," says Mary Ellen. "It was the land we needed—and there was a wonderful big shop building; the fact that there was a house was almost incidental."

Bob and Mary Ellen immediately began building sheds to serve as workshops. The first one went up in 1966; another followed in 1969. Since starting the business, which they named Whistles in the Woods, Bob has brought back more than a hundred machines and restored most of them for museums, preservation societies, amusement parks, private collectors—and sometimes for themselves. The machines have never stopped coming. One day last August, Bob went up to an auction in Maryland. When the bidding was over, he phoned Mary



It will first be sandblasted, then its iron surfaces repainted red and burgundy.

Ellen back in Rossville. "I'm sending two tractor-trailer loads home," he told her (two steam boilers on wheels, a large sawmill, a small portable steam engine, an 1867 museum-quality planer, and other choice pieces).

Since his Erector set days, Johnson had also been collecting old books, periodicals and technical manuals (he still has all the manuals for his original sets). By the mid-'70s, his library had grown to more than 4,000 titles; he has since exchanged more than half of it with museums, including the Henry Ford Museum in Dearborn, in return for steam engines and other antique machinery.

Today, the walls of his home are lined with the literature of 19th-century machines. There are many other such technical libraries these days, for by now some of Johnson's interests have become organized by academe. "During those early years," says Johnson, "let's say I was looking for a profession that didn't exist." Now it is

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officially taught in university classes devoted to industrial archaeology, the history of technology and the history of the nation's material culture. However, he laments the absence of "hands-on" restoration training in college curricula.

From one of the tightly packed shelves in his living room, Johnson pulls out an old catalog. The words Decauville are printed across the front. Who today remembers the name Armand Decauville, he asks. Thought to be the son of a French distiller, Decauville was distressed by the time lost getting the grapes from vine to press by horse cart. He devised a system of laying down portable narrow-gauge track along which heavy loads of grapes easily could be drawn by man, animal or steam engine; and when the field was empty of grapes, the track sections could be picked up and laid down in the next field. Decauville was a pioneer in what became a major industrial enterprise, manufacturing tracks and the cars to run on them. There were models for hauling logs and for sugarcane, models for coal mines, even an underwater model for oyster beds. As recently as

Mary Ellen Johnson trims lumber with 1886 band saw she and husband restored.

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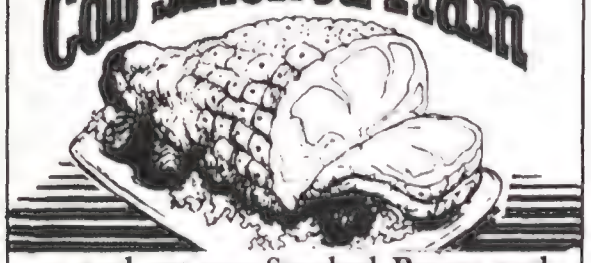

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Four years ago Johnson heard about a man who had gone deer hunting in the Pennsylvania woods and had come across the remains of an antique sawmill. The man had carted it home to California, painted it red and started to repair it. Johnson asked him to send a picture of it, and he recognized the partially restored object as a real treasure, a friction-drive circular sawmill dating back to 1888, one of the oldest examples of its kind. He bought it and had it brought back to Rossville. In his library he found

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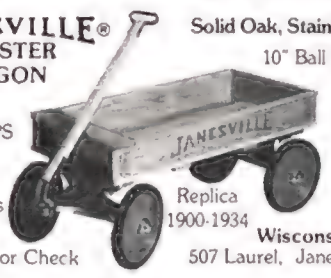

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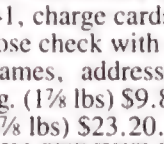

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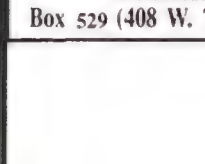

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the original blueprints from the company that made it, and working from them he put it back together properly. Now it cuts wood for a new owner just as well as it did in 1888.

In addition to restoring and re-creating iron and steel parts for 19th-century machines, Johnson works in other materials. He can fabricate anything from brass fittings and tin-alloy bearings to hand-turned wooden components such as spokes or saw frames.

It is difficult for most of us to imagine what is actually involved in restoring these sturdy old machines. The process, says Johnson, has two basic stages: the first is mechanical, the second cosmetic.

Take, for example, the 1886 Connell and Dengler band saw (p. 202), which Johnson couldn't resist because of its unusually ornate decoration. When Johnson got it home, he first looked it over thoroughly, took many photographs and made a lot of notes. Then, he checked his library and found old references with illustrations. Next, he completely disassembled the machine, analyzing and then cleaning every part; the badly worn ones were remachined or replaced. This band saw broke down into roughly 150 parts; of those, he had to replace only about five. He remachined all the shafts, bearings and saw guides—a total of about 25 pieces.

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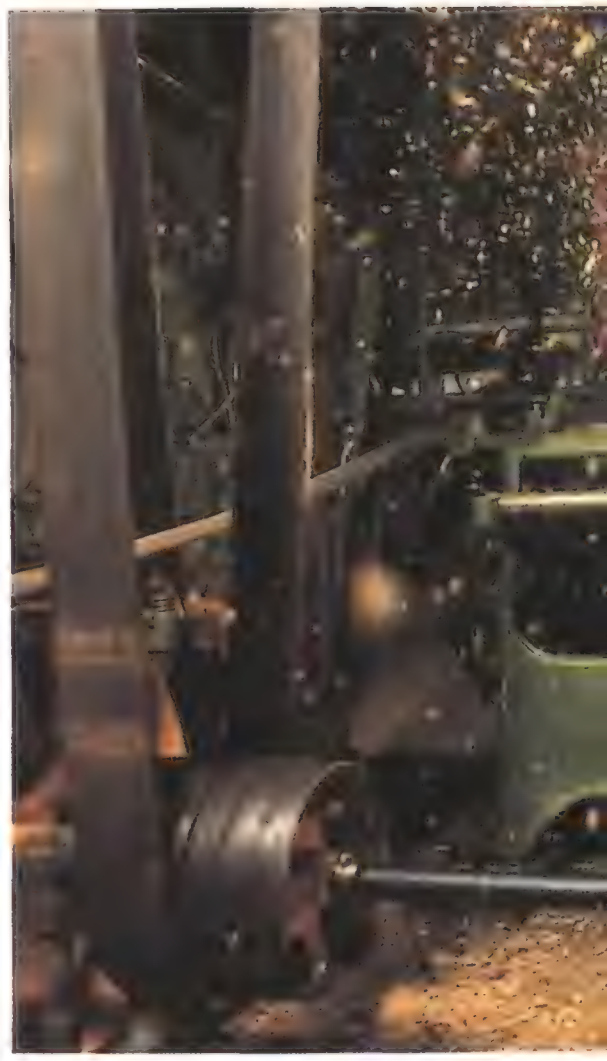

Antique lumber planer throws off a shower of sawdust in Johnson's workshop.

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work, says Johnson, the tedious work really began—the cosmetic finishing. First, he sandblasted all of the band saw's cast-iron parts, then hand-applied an epoxy-paste filler over their surfaces. This step accounts for the smooth surfaces of the old machines. "The surface of an iron casting fresh from the foundry is quite rough; the texture matches the sand that was used in making the casting," he explains. "But if you think of the smooth paint job on a modern automobile, this is the kind of finish they labored to produce in the 19th century on machines that would rarely be seen by anybody outside the factory in which they were used."

Once he had painted and finished the surfaces of the still-disassembled pieces, Johnson finally put the band saw back together for the moment of truth: Would it work? It did, as is usually the case with machines he has restored. In fact, Johnson's uncanny ability to cajole almost any old ma-

He found the 1892 machine disassembled and rusting under a Georgia apple tree.

chine into action is the first thing a museum curator or other 19th-century steam-engine aficionado will tell you about him.

But, says the millwright, sometimes your masterpiece won't work the first time you test it, and then you have to begin experimenting with a series of delicate adjustments. It plays havoc with schedules. "We get overbooked," says Johnson; "working up against deadlines is our major hurdle." He also admits he finds it difficult to say no to an interesting problem, even though he knows from experience it will only put him more behind.

One of the toughest deadlines he and Mary Ellen have faced was the 1976 opening of "1876," part of the Smithsonian's Bicentennial celebration. Today, their contributions to that show are still on display in the Arts and Industries Building (SMITHSONIAN, May 1976). Among them are the 32-foot-high working replica of the 19th-century windmill that John-

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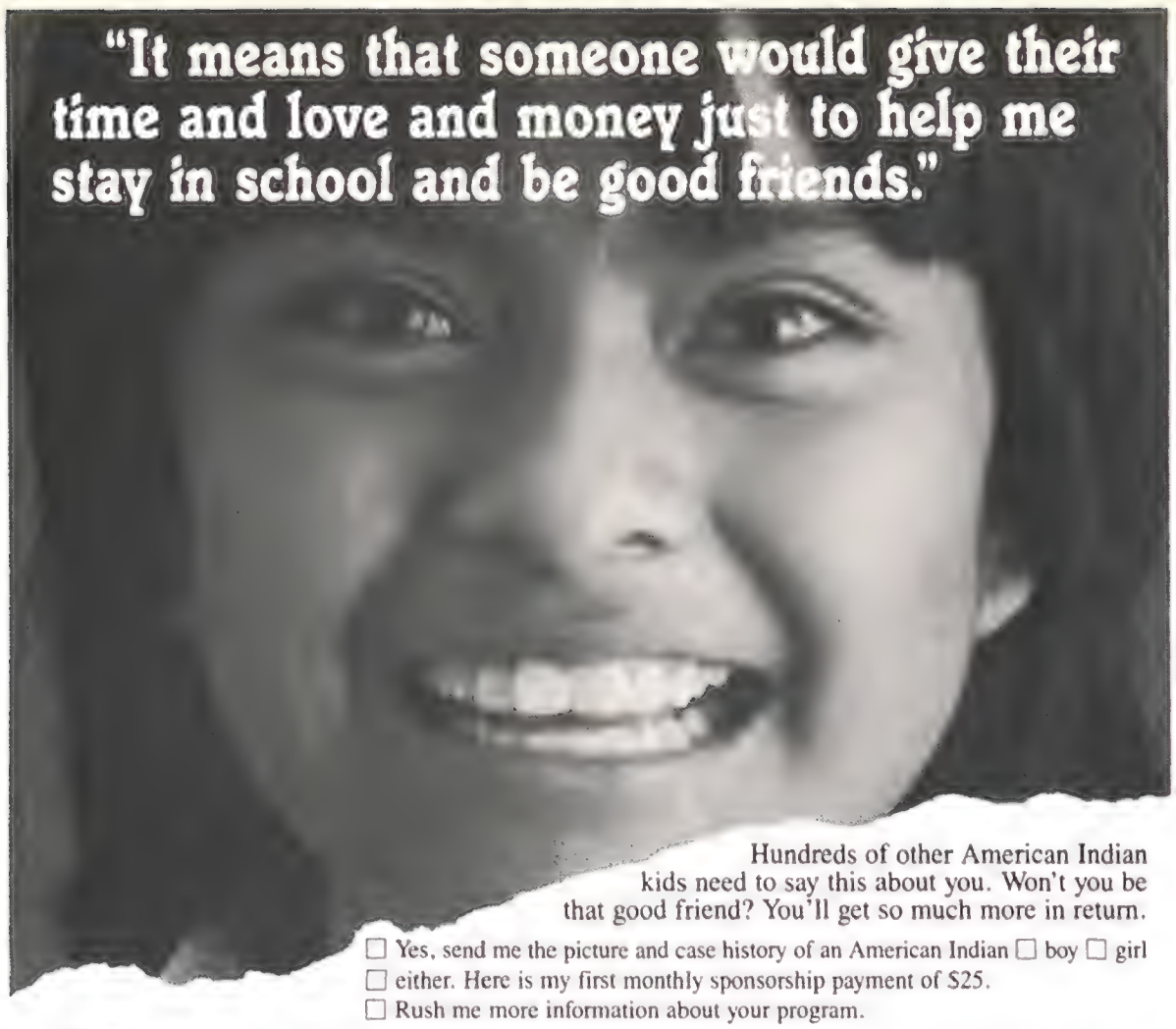

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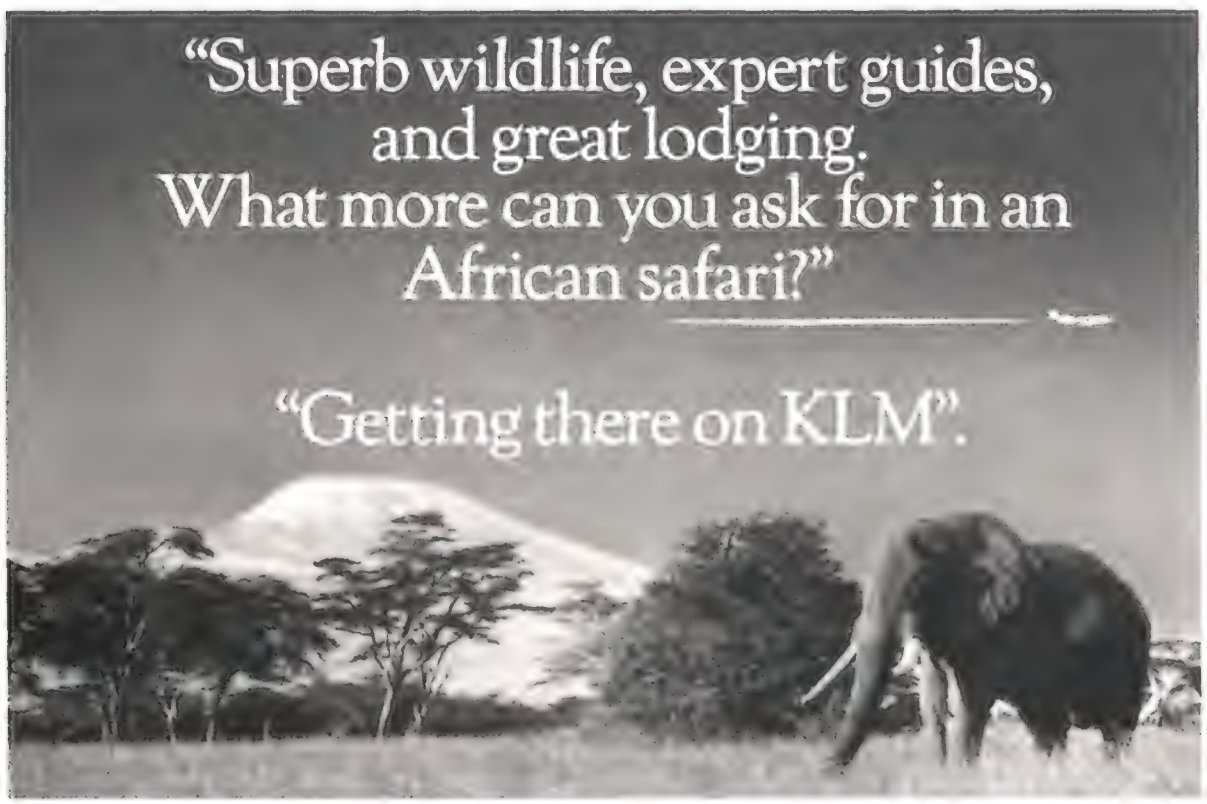
son built from scratch (p. 196). There's also the entire display of replica ceiling fans, which again he constructed using trade catalogs as his guide; as well as the tower for the steam-powered elevator, an elaborate rope drive, brass whistles, the restored Potter printing press and various mills.

The Johnson family trucked all of the paraphernalia from Rossville, then put in all-nighters assembling everything. "Nancy was 13 years old at the time," says Mary Ellen. "Bob and I spent a lot of the time on ladders, putting together the windmill and the fan pavilion. Nancy's job was to hand tools up to us . . . and unending cups of coffee." They worked right up to the opening, spending the last night driving home screws.

Right now, Johnson is working on his most ambitious project, the restoration of three mills in Puerto Rico, one on an old sugar plantation, the other two on a coffee and a corn plantation. Eventually they will be open to the public as living museums that contain some of the world's most valuable mechanical artifacts.

Water wheel was designed and built by Johnson after studying old trade catalogs.



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Meanwhile, the Johnsons have enough to keep them busy at home. For the past ten years, they have been turning their own acreage into a tribute to the 19th century. Bob is laying down a half-mile narrow-gauge rail line that will snake up the hill. He has acquired old English and French locomotives and put them back in working order. The sawmill—part of the great tractor-trailer delivery last August—is now in a thousand pieces, being sandblasted and cleaned. When it's finished, it will sit at the bottom of the hill.

Before long the Johnson family will be able to ride their own train up their own property, delivering feed to the goats as they ascend. They will load logs onto flatcars built in Decauville style and carry them down the hill to the steam-powered sawmill, which will convert the logs into lumber. And with the newly cut lumber they will—undoubtedly—build more sheds to house the truckloads of 19th-century steam-powered machinery that will—undoubtedly—keep arriving.

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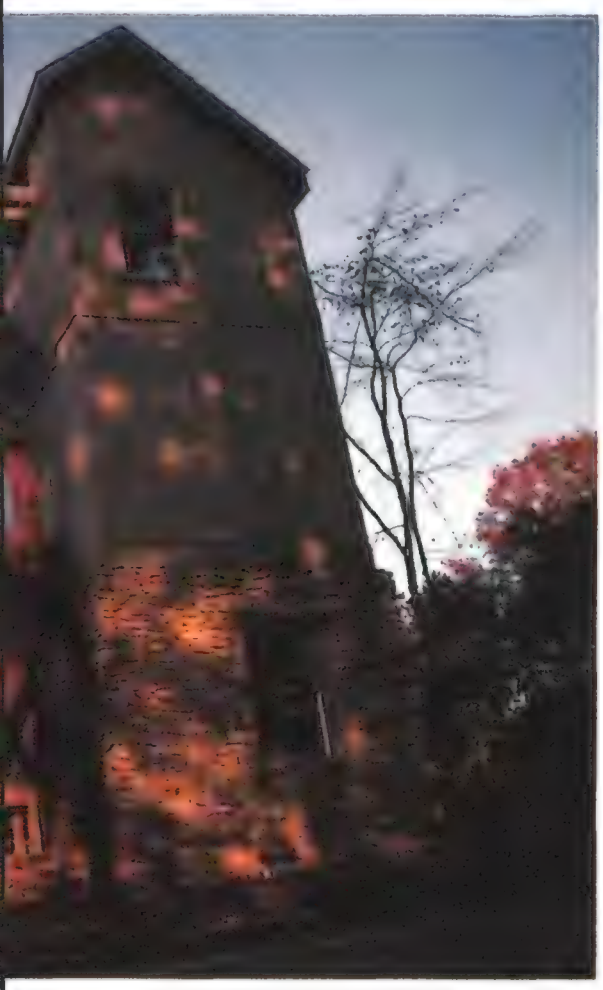

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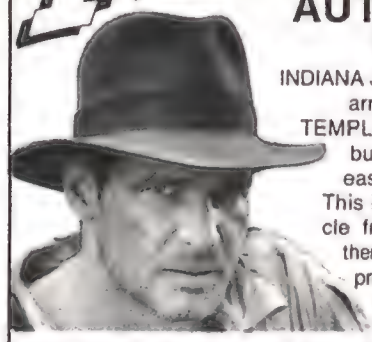

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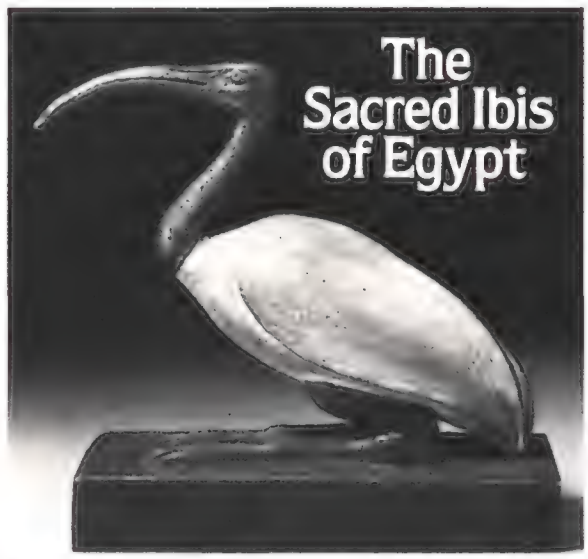

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Book reviews

Coat of Many Colors
Israel Shenker
Doubleday, $19.95

Israel Shenker's new book, *Coat of Many Colors*, is neither anthropology nor psychology, neither history nor journalism, neither philosophy nor theology; yet it plunges to the heart of Jewish culture, vibrates with the tension exerted by the contrary forces of ethnicity and assimilation, buzzes with the intense, silent conversation ceaselessly undertaken between ancient sages and commentators of the moment, and, finally, summons here and there human intermediaries to engage God in philosophical banter, as though, by invitation, He had popped in at the Upper West Side Manhattan apartment of a long-prominent Jewish intellectual for tea, cheesecake and a little kibitzing.

For 20 years a Time-Life correspondent based in Europe, Shenker subsequently became a reporter for the *New York Times* (these days he writes regularly for SMITHSONIAN, see page 44) where he was given what for him amounted to the most blissful assignment possible: write about Jewish themes in New York, the city with the largest Jewish population in the world. Though this current, unabashed book is by no means a collection of former newspaper features—it is too thorough, content-laden and, occasionally, self-indulgent for that—it nevertheless reveals the depth and variety of Shenker's journalistic bent and beat. For in the course of this sparkling tour de force of what it means to be Jewish, Shenker whisks us through customs (and traditions and scholarship) like a Semitic Virgil, on the way stopping at a kosher dairy restau-

rant on Broadway for blintzes, or visiting with former Chancellor Louis Finkelstein at his office at the Jewish Theological Seminary to talk about the art of doctrinal compromise.

Rather than with a set of locales, however, Shenker's peripatetic inquiry concerns itself with the geography of a state of mind, one that stretches back to Moses and that has been elaborated, embellished, refined, attacked and defended ever since. Starting with the Jewish—and original—conviction that God was a singularity, Shenker shows how Judaism graciously took over the squabbling function, meanwhile leaving to God certain ceremonial, judicial and revelatory odd jobs. It was, to be sure, still a God that should be prayed to, but it was also one you could argue with, split hairs with and admonish when the necessity arose, which it did periodically, most notably in the sulfurous days of the Third Reich.

Having established the general outline of the faith, the primacy of the Word, and the rabbinical preoccupation with exegesis, Shenker turns next to the enabling vehicle itself, language—in this case Hebrew and, later on, Yiddish. Following superbly rendered cameos of Sholom Aleichem and Isaac Bashevis Singer, masters of Yiddish literature, Shenker moves into the mainstream of Jewish-American authors and artists—writers like Roth, Bellow, Malamud and S. J. Perelman, and painters like Jack Levine, Raphael Soyer and Vavro Oravec.

But it is in the discussion of the Jewish role in the arts with that British phenomenon Jonathan Miller—physician, author, theatrical director—that Shenker hits his reportorial stride, conveying a generous portion of Miller's insights as well as a fair measure of his brilliance. Miller not only delves comfortably into the origins and evolution of American pop music (Gershwin, Berlin) but also into the social background of European music and opera. Among other things, he makes clear why Jews excelled as violinists in the past hundred years or so. Not only did the instrument itself still possess a slightly demonic reputation (as gypsies well knew), which made its linkage with Jewish violinists acceptable to European audiences, but it could also be featured as a solo instrument. This meant that Jewish virtuosos could be heard in concert on occasion without their having to be integrated into the institutional orchestras. It hardly comes as a surprise that following this neatly exposed instance of anti-Semitism, Shenker's next chapter bears the title "Auschwitz."

Coat of Many Colors is in many ways a demanding and disturbing book, intellectually and morally, for Shenker lets no one off the hook. Though tough-minded, it is nevertheless filled with warmth and humor; though loving, it is never swamped by sentimentality. Above all, it sticks magnificently to its purpose: to celebrate the culture or people or race or religion of which he is part, warts and all.

Alfred Meyer
Washington writer and editor

Pastorale: A Natural History of Sorts
Jake Page
W. W. Norton, $13.95

Don't judge this book by its cover, an antique drawing of a toad among weeds by the author's mycologist great-grandfather, or by its quaint title. This is not a natural history of any sort. It's hardly even a pastorale—whether that term is defined as a shepherd's song or as a hymn to the virtues of country life.

What *Pastorale* is is a delightful collection of musings on everything under the sun and a bit under the moon as well, from the decidedly untoady perspective of essayist Jake Page. In these pages, he is less often found down among his hated weeds than up on the porch of his Virginia home and aspiring zoo, munching jam sandwiches and musing on the state of the natural and man-made worlds. It is a fine vantage point indeed.

The conventional wisdom on essay collections (and *Pastorale* is largely adapted from Page's columns for *Science 84* and *Country Magazine*) is that they are to be swallowed, like strong medicine, in small well-spaced doses. One thereby avoids overdosing on the author's favored themes or succumbing to the side effects of repeated stylistic devices. This regimen for imbibing nature essays applies even to such potent writings as those of Stephen Jay Gould and Roger Swain.

But it is not the best prescription for the more dilute, yet equally restorative, potions of Page. Read in a sitting, perhaps while curled up on a porch swing, they provide more than a glimpse into Jake Page's peculiar world. He seems to have read most everything written on arcane matters that pique his curiosity—wasp biology, poultry social behavior

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and sauropod paleontology among them.

Yet rarely does Page let fact interfere with opinions, of which he appears to have no limit. There is clearly much about modern life that peeves him. Some of the complaints are petty and familiar—he rails more than once against messy teenagers and insidious insects. Some are petty and unfamiliar like "Cold War blatherskite" concerning a controversial exhibit of dinosaurs, or the agricultural ardor for "French Intensive Gardening . . . a religion" personified by his fictional friend, Dr. Veggie Legume.

And lest the gentle rhythms of a swing through Page's natural and unnatural world lull you to sleep, he rocks the seat by changing tones and topics with a motion as baffling as Satchel Paige's. What begins as a peroration against grackles ends as an ode to songbirds. A confession of the pleasures of owning a pet becomes a lament on the biological disadvantages of being one. Gently he leads us from the familiar perspective to his own, and rarely do we know, even in retrospect, how we got there. Never, however, does that diminish the enjoyment of the journey.

Page is at least as many parts humorist as naturalist. At times, as when lambasting pests ("ticks are simply inexcusable") or coming to their halfhearted defense ("insects are *not* finicky eaters"), he brings Benchley to mind. He attacks dandelions in the words—more or less—of E. B. White, "I say they're weeds and I say the hell with them," and wordplay worthy of Ogden Nash, "a plant . . . otherwise known as . . . yellow gowan (which I wish it would)."

But in breezing through *Pastorale* one begins to see its author for more than the mock-crotchety "antisocial chanticleer" (words he used to describe a rooster he knocked off) or the gentle, whimsical appreciator of his country companions: wife, daughters, finches, mastiff, three-legged cat, and even chickens "bopping like street kids with Walkmans."

Page worries sometimes, through the starry nights, about matters that should concern us all—about the danger of "invention overload" in a technology-dominated society, about the wisdom of "making spectacular last-ditch stands to rescue living fossils for a world they no longer fit," and most profoundly about making "sure the next big light I see in the sky is the morning sun."

Pastorale may not qualify as an old-fashioned celebration of nature, but it fulfills just the need met by the author's annual observations of migrating waterfowl off Chincoteague, Virginia—"it provides me with reassurance that the cycles of the globe will continue and that the special niche we provide in this small and varied part of the world may well remain attractive to all of us who will temporarily live just here just now."
Don Lessem
Naturalist and writer

Confessions of a Concierge
Bonnie G. Smith
Yale University Press, $14.95

Madame Lucie was born in Caen in the 1890s, the only daughter of working-class parents (her mother was a milliner), and she spent nearly 40 years as a Parisian concierge. Her *Confessions*, as compiled and edited by University of Rochester history professor Bonnie G. Smith, offer a vivid and palpable portrait of 20th-century France, seen through the eyes of a spunky, irreverent woman.

The first half of the book, the more interesting, chronicles Madame Lucie's childhood, youth and young adulthood. She was an impetuous girl, something of a daredevil, who loved adventure, games and mischief. When she was sent to school, at six, she hated it. The sisters, she said, made her feel that she was "the bad child," and chastened her for wanting to whisper, jump and run. School, she decided, "was like being in jail." At 13, she was apprenticed to a milliner, and soon joined her mother in her shop.

Madame Lucie's life was interrupted by economic depressions and wars: the family was forced to move to Lisieux when her father's business failed. Her first love, the handsome Philippe, was killed in the early months of World War I. She thought she would never marry, but when she met Pierre Lemaire it was, she sighed later, love at first sight. Pierre was several years older, divorced, with parents who were communists. He took her from her beloved Normandy to his own village in southern France. There they had two sons, both of whom grew up to fight in the next World War.

At this time, the family moved frequently in search of safety in the countryside; but during the Occupation, Madame Lucie went to Paris. There, faced with a severe housing shortage, she found an apartment but had to agree to care for the building and its assorted tenants. "For once," she said, "I was glad that my parents were dead and couldn't see what had become of me. I was never raised to be a concierge."

Madame Lucie's early years are seamlessly rendered from Smith's interviews into a fast-paced, richly detailed narrative. In the second part of the book, however, the format changes as Smith, herself a tenant in Madame Lucie's building, becomes directly involved in the older woman's life.

Madame Lucie, by the time Smith meets her, is 75, hunched over from arthritis, nearly blind and suffering from various transitory ills. A widow now, she lives in a seedy section of Paris, where her neighbors are artisans, immigrants and a distressing number of cats. She is obsessed by the minutiae of her life: sorting mail, collecting garbage, waiting for

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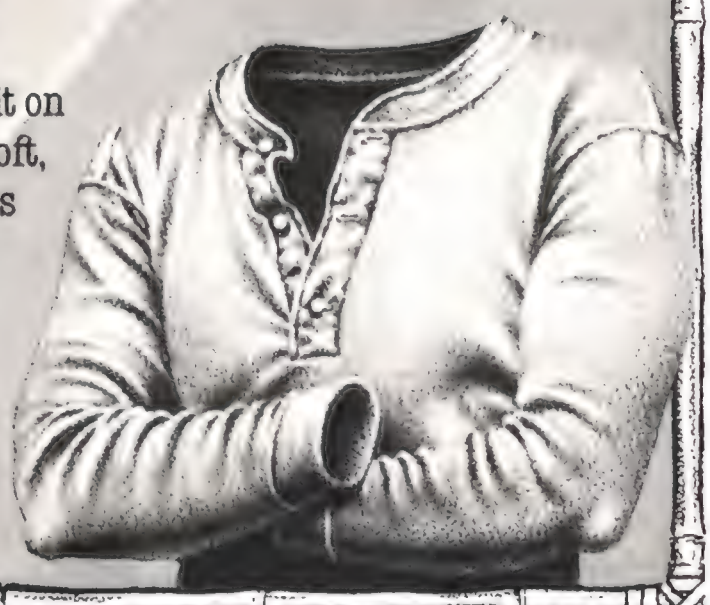

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the perfunctory visits of her son Antoine.

In this part of the book, Smith says she aims to imitate "the order of Madame Lucie's memory, the order of her daily life in later years, and the order of observations made about her by many witnesses." The problem, though, is that there is no order, only haphazard and often jerky movements within Madame Lucie's narrow world. Where Madame Lucie was able to evoke beautifully the landscape of her youth, her memory fails her in old age: she recalls the more recent past only in brief, undeveloped passages. She has little to say about the present. Rigorous editing and more description by Smith herself would have made this section stronger. As it stands, it tends to be repetitious and unfocused.

Despite the weakness at the end of the book, this experiment in social history is largely a success. Madame Lucie is at once Everywoman (she is, says Smith, typical of many Frenchwomen of her time) and a sprightly, original character. She shares her memories of circuses and parades, of fragrant stews and New Year's parties, of country picnics and warm croissants. We are there through the long labor when her first child is born, and when he returns from the war. Madame Lucie is so frank and unpretentious, and Smith so respectful of her subject's integrity, that we are afforded an unvarnished, refreshing view of a vanished past.

Linda Simon
Author and critic

Voices of the Old Sea
Norman Lewis
Viking, $15.95

"Here . . . you will enjoy great tranquility," British novelist and journalist Norman Lewis was told upon his arrival in the remote Spanish fishing village of Farol. Lewis, whose nonfiction books include most notably *Naples '44* and *Golden Earth*, went there seeking "vanished times," where the past "would have been embalmed, and outside influence held at bay. . . . It was a conjecture that proved largely to be true."

Although Farol is located on Spain's northeastern Mediterranean coast, there was no sign of a Costa del Sol in 1948, the first of three long successive summers Lewis spent there. The town's population could be counted in the dozens, its sole

means of support the rich shoals of sardines and tunny that filled its nets every March and September, its sole amenity the town's *fonda*, an inn reeking of cats, its bar depressingly adorned with the mummified corpse of a dugong.

The town's life was simple and primitive, its rhythms strong and stately, like the tides of the sea. There was the fishing; the long, somnolent winter; a brief promenade in the town's one street in the evening; a small church indifferently attended only by the women; a strange ceremony each year, called *Sa Cova*, as meaningless to the people of the town as it was necessary to the structure of their existence. The birthrate was shockingly low, and for good reason: married couples seldom slept together because children simply could not be fed.

And yet, as Lewis makes vividly clear, the people of Farol were, in their way, noble. Though unskilled at reading and arithmetic, the men gathered each evening at the *fonda* and recited the day's news and adventures—in handsome blank verse—abandoning their usual Catalan speech for the more poetic cadences of Castilian. Their needs were few and they required little of life. They asked only that the shoals of fish keep coming as they had for, it seemed, all of history. They shared readily with anyone in greater need. They lived in peace. They could make room for a stranger.

And then the fish stopped coming. And a freak storm wrecked their boats, which, because the fish had not come, they could not afford to repair. And then the 20th century arrived in the person of a clever black-marketeer and entrepreneur bent on turning the dying fishing village into a colorful and bustling seaside resort for French and German tourists.

As Lewis watched over three summers, Farol died and was reborn. Its people resisted at first, but the past could not be revived. They would henceforth have to live with previously unthinkable things: indoor plumbing, guests in their homes, drunken foreigners, modern bathing suits, street lighting and enough money in their pockets to feed themselves something other than fish and beans.

Was it progress? Well, yes, in a way, but only at the cost of losing something irretrievable. Norman Lewis captures it here in vivid prose, in living sketches of the friends he made in Farol and in scenes of local life. Despite its resignation and sadness, *Voices of the Old Sea* is a moving and memorable portrait of one of the countless ways in which it is possible to be human.

Alan Ryan
New York novelist and journalist

Daughters of Joy, Sisters of Misery: Prostitutes in the American West, 1865-1890
Anne M. Butler
University of Illinois Press, $16.95

Film and fiction generally portray frontier prostitutes as rollicking bawds—brash, independent and playing significant roles in local society. This may seem more attractive than the lurid descriptions by 19th-century bluestockings, but it is hardly more accurate. In truth, the Old West was a pretty miserable place. For cowboys, miners, homesteaders and whores alike, life was typically solitary, poor, nasty, brutish and short.

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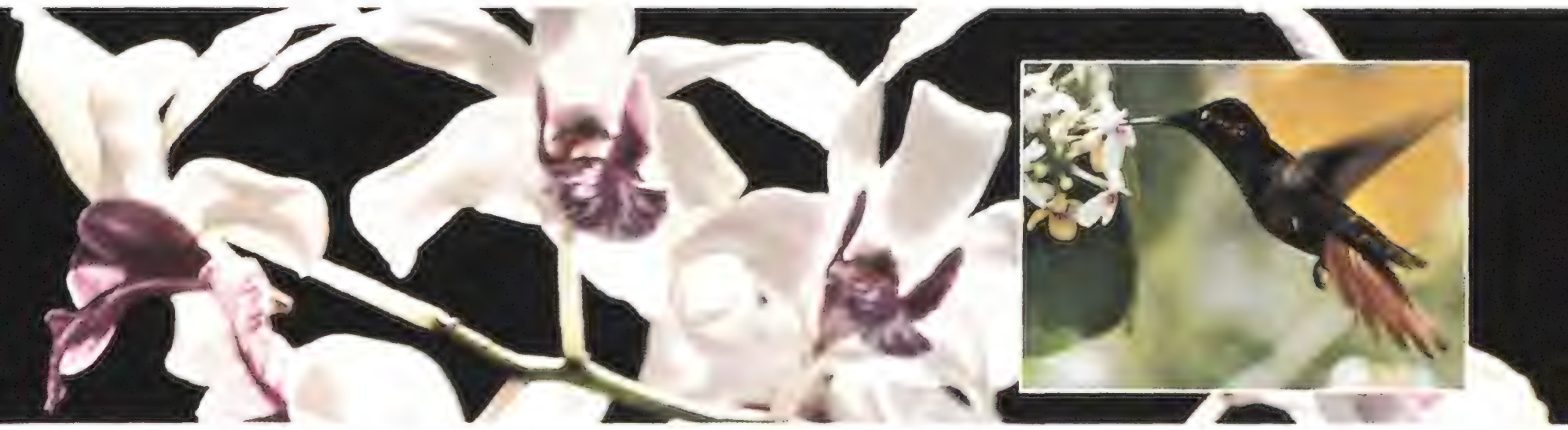

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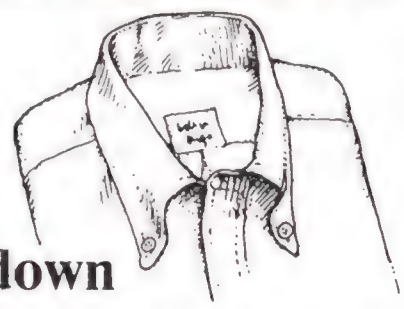

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This, in a nutshell, is the thesis of *Daughters of Joy, Sisters of Misery*. In the frontier environment, with few jobs and inflated prices, prostitution was just a way for the poor and the young to survive. And it was a competitive business. The women sold themselves aggressively, but since their expenses were high and the men they served generally poor, most prostitutes lived from day to day. They were frequently victims of violent crime, and alcoholism, drug addiction and suicide were depressingly common.

With madams to ease the tensions, brothels do not seem to have been so violent, but life in the cribs and on the streets was brutish indeed. There, prostitutes regularly robbed, cursed and assaulted each other. The only kindness these women could expect was that if they died, one of their sisters would arrange their burial.

The institutions of frontier society offered little help. Churches wanted nothing to do with "fallen women." Men who would marry prostitutes were usually irresponsible or abusive, and matrimony was often nothing more than an ephemeral business deal. The press ridiculed whores, and the law exploited them. Indeed, one court in Texas even "permitted prostitutes to pay a deposit on [their] fine and then return to the streets to earn the rest of the money."

As this last bit of hypocrisy implies, prostitution was widely viewed as an inevitable concomitant of frontier life. The Army looked the other way when laundresses or sutlers' servants offered sex on the side, and civic leaders felt they had done enough by restricting prostitution to the red-light districts.

Anne Butler conveys this pervasive ambivalence in a scholarly, precise way. Her book is energetically researched, heavily footnoted and replete with anecdotal detail. In Austin, Texas, for example, 240 different prostitutes accumulated 405 arrests between 1876 and 1879, yet fewer than a quarter involved charges of prostitution. The most common complaint against these women was their use of offensive language! Hotel rooms in Wichita cost male boarders $6 a week, but prostitutes paid $14.

There are a few missteps. It seems farfetched, for example, to argue that structural parallels between life in a brothel

and life in a convent eased the transition between prostitution and membership in the Order of Saint Mary Magdalen, a religious community in Minnesota, founded to give prostitutes an "alternative." Each may indeed have entailed "an isolated, rigidly circumscribed life among women of unusual dress and demeanor," but the comparison is more strained than useful. Fortunately such lapses are rare.

Daughters of Joy, Sisters of Misery is a good revisionist history. The analysis is built on a careful examination of previously neglected data, and the author's conclusions mesh nicely with our changing view of how the West was really won. It may be less romantic than the older images, but it's probably a lot closer to the way things were.

John R. Alden
Ann Arbor writer and anthropologist

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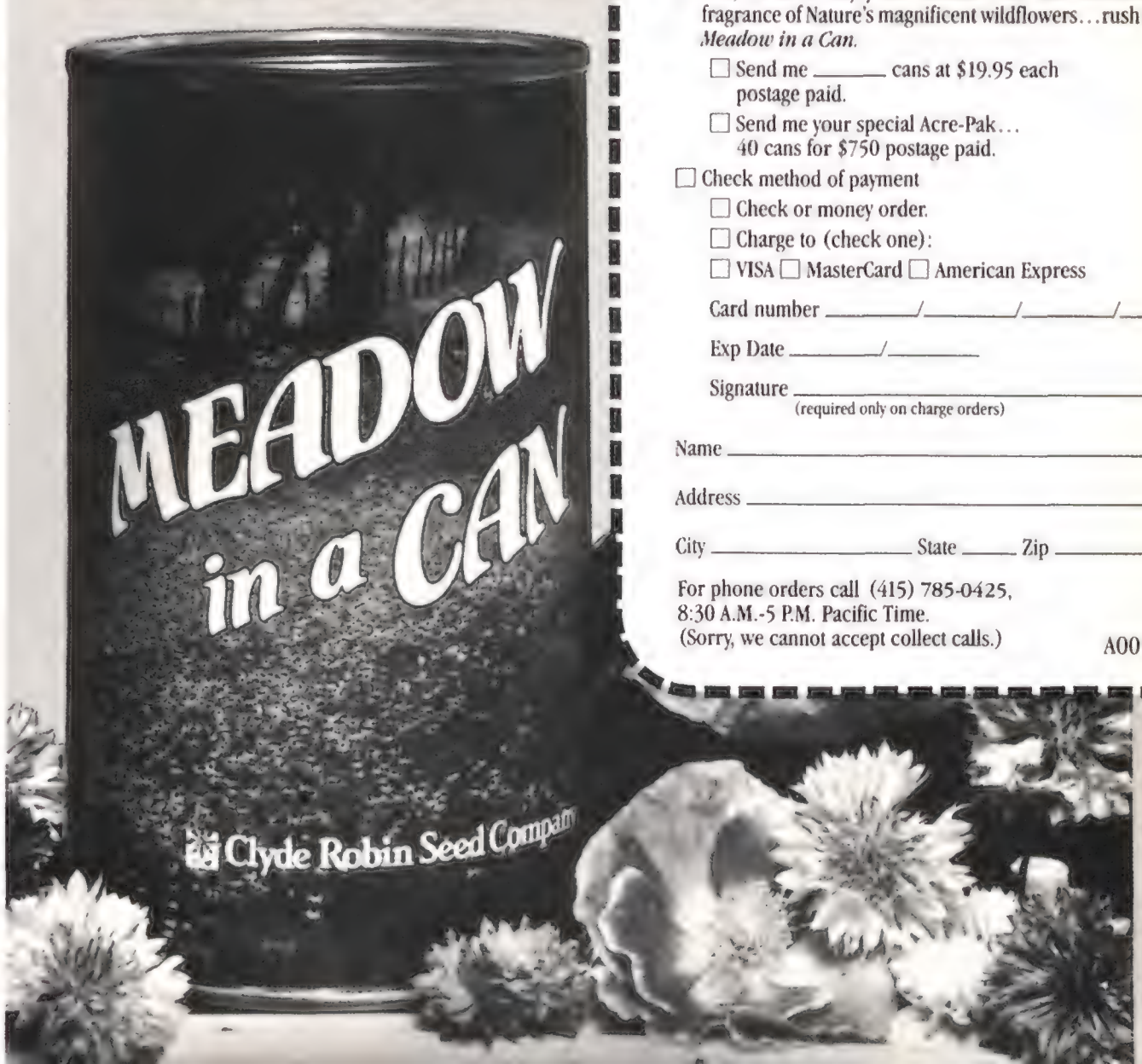

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The story is told that it was in a Venetian cafe, early for a rendezvous, that he first ordered the two drinks at one time. His coffee arrived and, just as he saw his contessa stepping from her gondola, the liqueur. As he started to his feet, somehow jostling the waiter, the Sambuca Romana spilled, into the coffee. There was time for only one sip. He sipped, considered a moment, then sat down to finish the cup at his leisure.

It was plain the lady would have to wait. The attraction of this sensuous new taste was greater even than hers.

For the rest, we know Byron left Italy soon afterwards for Greece and his ultimate destiny. As for Sambuca Romana and coffee, the taste is history.

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Country houses (p. 44)

The Treasure Houses of Britain: Five Hundred Years of Private Patronage and Art Collecting, edited by Gervase Jackson-Stops (exhibition catalog), National Gallery of Art and Yale University Press, November 1985

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Authenticity in Art: The Scientific Detection of Forgery by Stuart J. Fleming, Crane, Russak (New York), 1976

"Chemistry and the Analysis of Cultural Objects" by Josef Riederer, *Universitas* (Stuttgart, West Germany), March 1984

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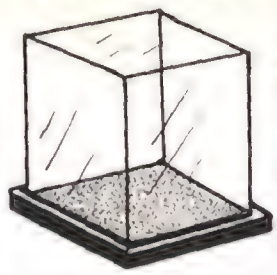

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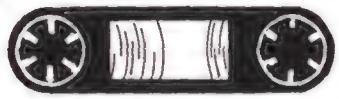

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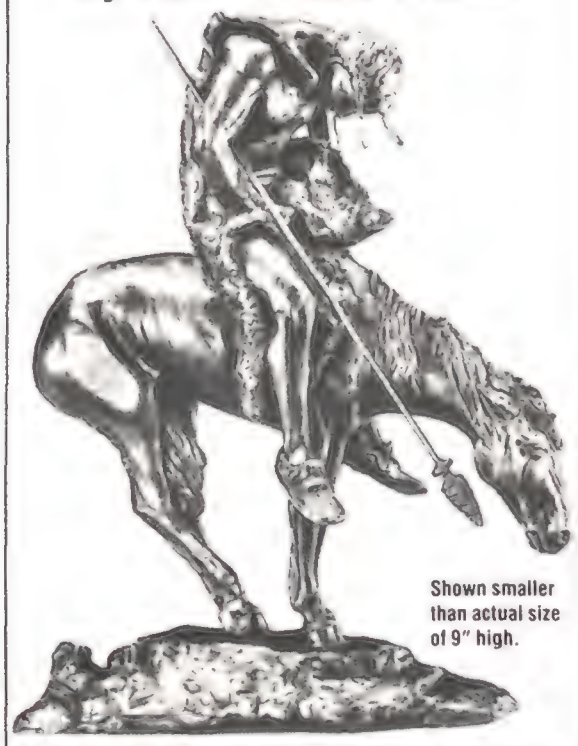

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Smithsonian highlights

Twentieth-century pioneers are the subject of this month's *Smithsonian World* public-television special, which airs on October 9 at 8 P.M. Among the trailblazers being honored are pilots Jeana Yeager and Dick Rutan, who will attempt an around-the-world nonstop flight in the *Voyager* (SMITHSONIAN, February 1985), and cave diver Jill Yager (p. 222), who found a tiny unknown crustacean in Bahama waters. The discovery changed her life: she is now working toward a PhD degree in biospeleology—the ecology of submerged caves.

Planning a Smithsonian visit?

Get a head start—send a postcard request or call for a free Associates' Planning Packet: Associates' Reception Center, Smithsonian Institution, Washington, D.C. 20560; (202) 357-2700 or TDD for hearing impaired (202) 357-1729. At the Associates' Reception Desk in the castle, you will receive printed materials, details on members' benefits and an orientation program.

Special October exhibits and events

National Air and Space Museum
Leroy Grumman and the F6F Hellcat (October 2-August 1986) Restored aircraft, models, and film showing scenes of World War II production, flight testing and operations in the Pacific.
Flight Testing of Experimental Aircraft (October 17; 7:30 P.M.) Lecture by Brig. Gen. Charles Yeager, USAF (ret.); call 357-2700 for ticket information.

National Museum of American Art
Art, Design and the Modern Corporation: The Collection of Container Corporation of America, A Gift to the National Museum of American Art (October 24-January 19, 1986).

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October's *Smithsonian World* features Jill Yager (right) diving in Bahamas.

Hirshhorn Museum & Sculpture Garden
Selections from the Collection of Marion and Gustave Ring (October 17-January 12, 1986).
A New Romanticism: 16 Artists from Italy (October 3-January 5, 1986).

National Museum of American History
After the Revolution: Everyday Life in America, 1780-1800 (opens mid-October) Major new permanent exhibition focuses on three well-documented families from different cultural groups, and presents more than 1,200 artifacts from the period.

National Museum of African Art
A Festival of Igbo Arts (October 5; 1-4 P.M.; Museum Courtyard) Make masks, decorate hand mirrors, embellish yourself with body designs. No preregistration necessary.

Freer Gallery of Art
Islamic Metalwork (September 27-January 5, 1986) See *Highlights continued.*

Cooper-Hewitt Museum (New York)
The Modern Spirit: Glass from Finland (October 1-January 5, 1986) First U.S. retrospective of Finnish glass includes some 200 examples.

National Zoo
Wildlife Survivors in the Human Niche (November 1, 2) Symposium open to the public; call 673-4866 or 673-4840 for tickets or information.

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Associates in New York State will have the opportunity to meet Smithsonian curators and scientists when the National Associates Lecture and Seminar Program visits Syracuse, November 4-10, and Buffalo, November 6-12. The Syracuse series features lectures on electron microscopy, Dutch art and American studio glass, as well as seminars on nature photography and animal communication. The events in Buffalo include performances of American folk music, lectures on American art and a seminar on the art of biographical writing. Associates in these cities should have received invitations by this time. For further information, write: Lecture and Seminar Program, A&I 1190, Smithsonian Institution, Washington, D.C. 20560.

Resident Associate events

To become a Resident Associate, or to find out about the many other activities presented monthly, or for fee and ticket information, call 357-3030. Here are some October events:
The Arts and the Economy: An Anniversary Reflection with John Kenneth Galbraith (October 1; 8 P.M.) Lecture.
Poetry of the Hemispheres (October 6; 7:30 P.M.) Poet and publisher James Laughlin and the Con Spirito Quintet collaborate in readings of William Carlos Williams' work.
Françoise Gilot on Pablo Picasso (October 7; 8 P.M.) A reminiscence.
The Hanover Band from London (October 11; 7 P.M.) Selections from famed April 12, 1800, concert of Beethoven works.
Jazz Goes Dutch—William Breuker Kollektief (October 18; 8 P.M.) Ensemble.
John Eaton in Concert (October 20; 8 P.M.) Solo pianist.
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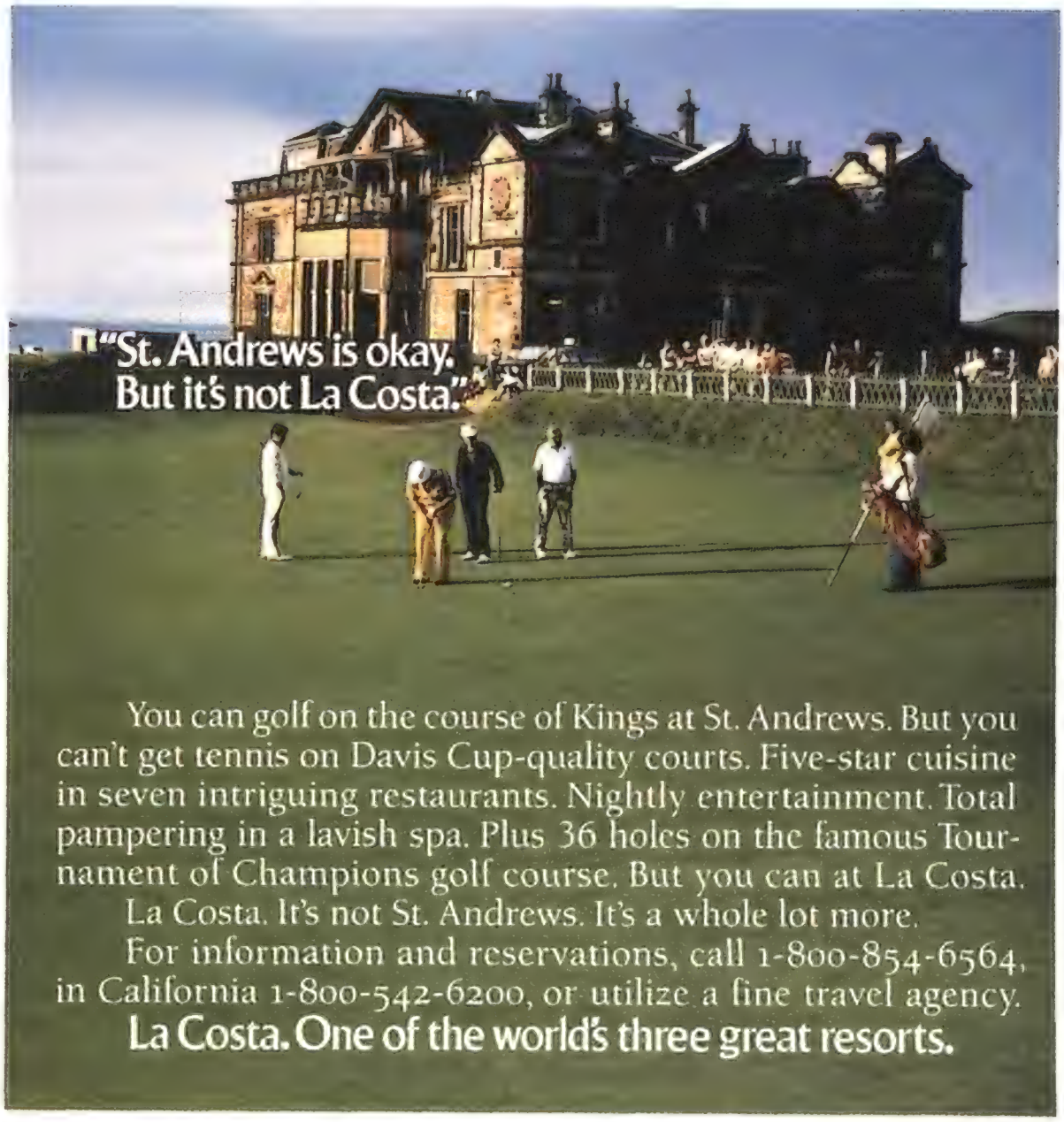

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The Gentle Art of Verbal Self-Defense gives you a complete education in communication, an education that will improve the quality of your personal and professional relationships. On your own, it might take you years of trial and error, of fights and misunderstandings, to learn all the lessons of this book. So, why not wise up *now* by ordering your copy of the book today?

The Gentle Art of Verbal Self-Defense, originally $12.95, now costs only $6.95. And, should you want to return the book, you can do so and have your money refunded with no questions asked.

About the Author

Psycholinguist Suzette Haden Elgin has presented her innovative self-defense principles in a variety of formats. She has given workshops and seminars all over the U.S., including verbal self-defense sessions for doctors, lawyers, and other professionals. Dr. Elgin has also created a self-defense tape and a training manual for people who teach her self-defense techniques.

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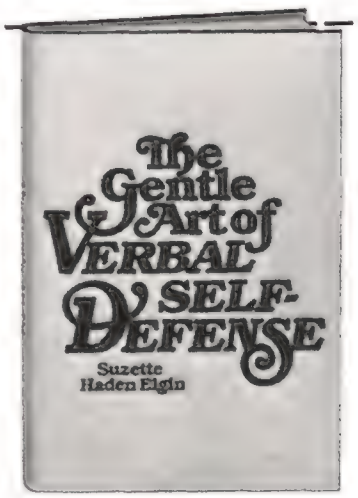

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Monday evenings beginning October 21; 6 P.M.) Series covers all aspects of contemporary Greek culture.
Patterns in Nature with Jonas Salk (October 22; 8 P.M.) Illustrated lecture.

Smithsonian on the air

Radio Smithsonian: features on this weekly half-hour series include a look at the history of fighter aircraft, the work of artist Alexandre Hogue, and highlights from the creative activity of black artists at the end of World War I.
Smithsonian Galaxy: short radio features explore history, science, art.
Here at the Smithsonian . . .: short TV features include a look at contemporary art from the Martha Jackson Collection at NMAA and the history of the rural country store/post office from Museum of American History.

To find out what stations in your area carry these programs, write: Office of Telecommunications, MNH Room C222B, Washington, D.C. 20560.

Smithsonian Institution Traveling Exhibition Service

SITES circulates exhibitions to hundreds of cities outside Washington. To sponsor a show in your community, write: SITES, Smithsonian Institution, Washington, D.C. 20560. Here are some October exhibits:
Oakland, California (October 5-November 3) *Images of China: East and West*, Kaiser Center Art Gallery.
Seattle (October 5-November 3) *Matchsafes: Striking Designs*, Museum of History and Industry.
Boston (October 12-November 10) *Spectacular Vernacular*, Boston Architectural Center.
Columbus, Georgia (October 18-November 24) *Audubon: Science Into Art*, Columbus Museum of Arts & Crafts.
New York City (October 19-December 1) *Five Centuries of Italian Textiles*, Fashion Institute of Technology.
Trenton, New Jersey (October 19-December 1) *Eva Zeisel: Designer for Industry*, New Jersey State Museum.
Allentown, Pennsylvania (October 26-December 8) *Homage to Amanda: 200 Years of American Quilts*, Allentown Art Museum.
College Park, Maryland (October 26-December 8) *New Vistas: American Art Pottery 1880-1930*, University of Maryland Art Gallery.
Mobile, Alabama (October 26-December 8) *Material Evidence: New Color Techniques in Handmade Furniture*, Fine Arts Museum of the South.

Highlights continued

Islamic metalwork at Freer Gallery

Rich, sometimes surprising motifs characterize the technically superb products of this complex culture

Islamic metalwork has long been prized for its technical excellence. The intricate 12th-century candlestick below (bottom left) is a particularly fine example. It was hammered by an Afghan craftsman from a single sheet of brass, then inlaid with silver and copper. He worked with such deftness that the piece has no seams.

Freer curators and conservators closely studied this candlestick and 37 other objects for the new exhibition, "Islamic Metalwork," which runs through January 5, 1986. Along with curator Esin Atil's commentary, the technical findings of conservators W. T. Chase and Paul Jett will be published. The show, organized by curator Glenn Lowry, is the first at the Freer Gallery to present extensive technical data on the pieces in addition to historical and esthetic information. The decoration on the objects' surfaces reflects the sometimes surprising variety of taste within the Islamic world—for example, the 13th-century canteen (top left) depicts in its center the Madonna and Child. *Constance Bond*

Hammered brass canteen, perhaps from Syria, shows scenes from the Nativity.

Tiny silver bowl, one-and-a-fourth inches high, was cast in Iran in 16th century.

Nine-inch-high basin, 13th century, was made for an Ayyubid sultan.

Afghan candlestick was hammered with such precision that it has no seams.

Eighth- or ninth-century Egyptian incense burner was cast in sections.

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Domestic Study Tours

Cumberland Island November 9-15: Enjoy the beauty of what was the Carnegie family's Georgia island retreat. Camp on pristine beaches, hike in coastal forests.

Halley's Comet December 5-9: It happens every 75 years! Come share it with the Smithsonian. Enjoy special tours and seminar featuring Carl Sagan, then travel to the Blue Ridge Mountains where the clear skies offer opportunities to see the comet.

Christmas at the Smithsonian December 6-8: Spend a weekend at the Smithsonian with behind-the-scenes programs and dinners in museums. Features exclusive tour of new exhibit, "The Treasure Houses of Britain."

Hawaii January 19-February 1 or February 16-March 1: Explore the natural and cultural beauty of the Hawaii most people only dream of. A camping adventure to Oahu, Hawaii, Maui and Lanai.

Yellowstone in Snow February 14-23: A cross-country ski adventure through snow-covered landscapes of Yellowstone and Grand Teton National Parks.

Baja Whale Watch February 21-March 1: Board the *Royal Polaris* in San Diego for an unforgettable trip down Mexico's Baja peninsula to observe gray whales.

Cajun Country March 24-31: Experience Louisiana, from the sounds of New Orleans jazz, aromas of Creole cooking, to mysteries of the bayou.

Okefenokee Swamp April 5-12 or 12-19: Canoe and camp in this wilderness sanctuary for millions of singing creatures.

Arizona April 16-24 or April 26-May 4: From the Arizona Sonoran Desert to the Chiricahua Mountains, travel throughout the area by van to see cacti in bloom, meet field researchers.

The Hopi and Navajo May 17-27: Visit Grand Canyon, Monument Valley and Canyon de Chelly for an in-depth look at Southwest Indian cultures.

America's Heritage June 28-July 12: Aboard the *Nantucket Clipper* see the July 4th unveiling of the Statue of Liberty. Cruise historic New England and Hudson River ports of call.

Coming in May: New York Theater

Washington "Anytime" Weekend: Discover your capital city in the Smithsonian style. As a membership benefit enjoy private tours, luxurious accommodations and much, much more. A perfect weekend getaway. Must reserve ten days in advance.

Foreign Study Tours

People's Republic of China, 1986: Choose from ten unique itineraries: from Shanghai, to Tibet, to Beijing; by train and by boat; all led by Sinologists.

Adriatic Shores October 6-18: Cruise on the *Argonaut* along the coasts of Yugoslavia, Italy and islands of Korcula, Corfu and Ithaca.

Mediterranean World October 9-23: Embark on a voyage tracing the roots of Western civilization. Take the *Illiria* to the classical centers of Greece, Sicily, Italy, Crete and Carthage.

India by Train October 30-November 15: A Smithsonian premiere! Exclusive use of a maharaja's "Palace on Wheels" to visit the glorious sites and cities throughout the state of Rajasthan.

The Atlantic Crossing December 5-20: A sailing adventure from the Canary Islands to Martinique on the four-masted square-rigger *Sea Cloud*. Features lectures on sailing and navigation, marine life and the history of this great ship.

Christmas in Europe with the Smithsonian Celebrate with fellow Associates in one of three idyllic settings: Austria, December 21-January 3; Canterbury or Wales, December 22-January 3. Traditional Yuletide celebrations make this a special holiday season.

Russia December 26-January 12: Ring in the New Year with a festive holiday gala. Attend the best of Russian theater while visiting historic sites and cities.

Backstage London January 2-11: In Europe's theater capital, attend traditional and avant-garde productions, meet company members backstage.

South America January 15-February 7: A spectacular first for the Smithsonian! Three-week land and sea voyage from Rio de Janeiro, including Iguaçu Falls, Strait of Magellan and Patagonian channels, ending in Santiago.

India Wildlife Safari January 31-February 20: Travel by elephant and jeep to observe rare birds and animals in exotic India and southern Nepal.

Thailand and Burma January 31-February 21: Colorful cities, remote villages of the hill-tribe people and historic sites capture the splendor of two of Asia's most scenic countries.

Mexico January-March: Choice of three exciting archaeological tours in the Yucatán peninsula and central Mexico. See extraordinary Maya ruins in the company of an archaeologist.

Borneo and the Spice Islands February 2-22: Aboard the *Illiria*, travel from Southeast Asia to Australia, an area inhabited by more than 350 ethnic groups. Observe the diverse cultures and traditional art.

A Hike in New Zealand March 4-20: Discover wild flowers, crystalline lakes and snowcapped peaks on the Milford Track.

Blue Whales of Mexico March 9-16: Cruise the Sea of Cortés aboard the *Don José* to explore desert islands and coastlines in search of the mighty blue whales.

Coming in April: Japan Countryside

Write National Associates, Capital Gallery 455, Smithsonian Institution, Washington, DC 20560 or call (202) 287-3362 for tour brochure

n Washington

Smithsonian Seminars

Expand your educational horizons as you combine a pleasure-filled visit to the nation's capital with stimulating week-long courses of study. These purposeful vacation seminars give you the opportunity to share special interests with fellow Associates.

British Country Homes

January 5-10 and January 12-17
Join eminent scholars from Great Britain for a seminar on Britain's fabled country homes and see the exhibition "The Treasure Houses of Great Britain" at the National Gallery of Art during a week that will feature richly illustrated lectures, special gallery tours and gala evening events.

This dazzling exhibition, presented under the patronage of Their Royal Highnesses The Prince and Princess of Wales, will bring together more than 700 works of art, including paintings by Rubens, Velázquez and Turner; sculptures by Praxiteles and Bernini; furniture and decorative arts that represent a tradition of art collecting and private patronage on a grand scale from the 15th century to the present.

The lecture program will provide insights into the cultural and political forces that gave rise to hundreds of splendid country houses. Small group sessions will highlight superb collections of paintings, porcelain, silver, costumes and textiles, jewelry and furniture.

Associates will learn about the challenges of restoring and preserving country homes and the objects they contain; explore the colorful history of heraldry; enjoy the genteel rituals of tea drinking, and gain a firsthand view of two of Britain's most famous homes as their present owners describe contemporary life in Scone Palace and Firle Place.

October 27-November 1
Space may still be available in this month's Smithsonian Seminars in Washington. Topics include **Anthropology at the Smithsonian, New Perspectives on American Art, Man's Quest for Wings: Highlights of Aviation History, Eighteenth-Century European Music** and **Treasures of the Smithsonian: A Writer's View.**

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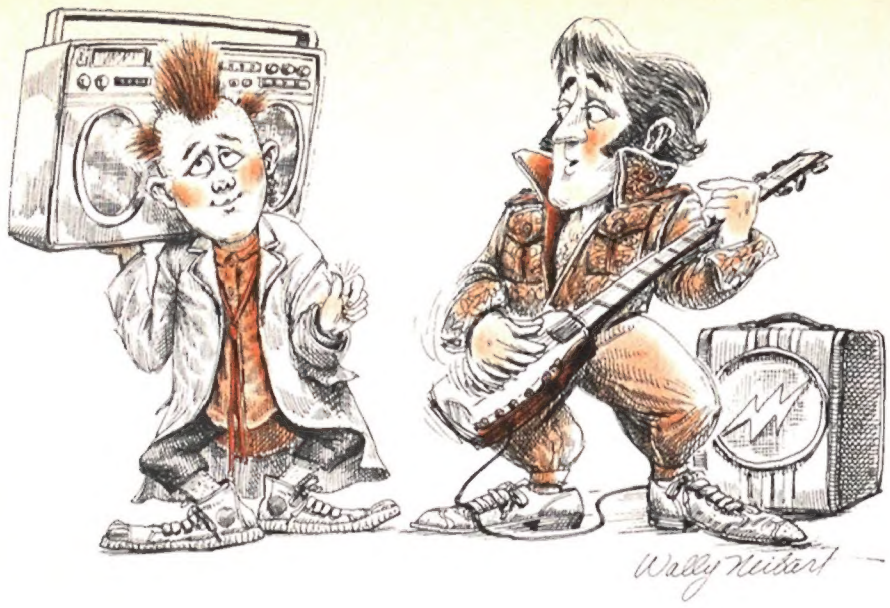
By Richard Wolkomir

'Bah-oom, bah-oom, oot-oot-ooo be-yoo'



A professor I know, a poetry scholar, recently listened to some of his son's and daughter's favorite rock-music records.

"Have you ever heard the *words*?" he asked me, gloomily thumping his knee with the collected works of Keats. "Civilization is *sinking*!"

I know what he means. I recently saw a fellow leaning against the bank in our staid New England town, sporting dyed-pink raggedy hair and what seemed to be Abraham Lincoln's Inaugural coat. He had a "blaster" tape deck turned up LOUD, treating lunch-going office workers, enroute to bleu-cheeseburgers and tofu tacos, to a group caterwauling in siliconized androgeny about the agony, man, like the living *lie*. . .you know?. . . of having a sire who's a *jerk*. In a *tie*.

Or was it about having a dirk in your eye? Or a quirk in your pie?

Hard to say, man. But it made me realize that civilization has indeed declined since, say, 1956, that classic era of rock and roll when the professor and I were awash in youthful hormones, before the glum slide into today's synthesizered verbal Sargasso Sea of affectless entropy, as I'm sure the professor would put it.

The bright side, now that *Beowulf*'s been done, is that PhD thesis writers should strike uranium in those lyrics from rock's Golden Age. I've been making some notes, working from memories of those vibrant evenings when I and the other young jackanapes with whom I associated would meet on the porch, with the record player turned up LOUD. As the setting sun gilded our greased-back ducktail haircuts, we would analyze the symbolism in such works as "Milk Cow Blues" and "Good Golly, Miss Molly."

Some of my transcriptions may be shaky because, like the *Iliad*, these lyrics were composed for oral transmission. And this was the height of the Nonobjective Movement, when lyricists reflected upon life's meaning in such terms as "doowah," which is difficult to spell. But the gist is here, and what a gist it is!

Consider, for instance, the opening movement of "Get a Job," performed by the Silhouettes. It went like this: "Sha na na na Sha na na na na . . . Dip dip dip dip dip dip dip dip, Boom moom moom moom moom moom, Get a job."

This passage alone could support a thesis, for it perfectly expresses the still-vital society's jubilation in the work ethic, literally yipping with glee at the prospect of gainful employment. "Sha na na na," however, whispers "shame" upon the lethargic in those times of "boom-moom-moom." The mood is peppy, but the negative "na na na's" are somber.

Of course, not *all* the era's lyrics carried so heavy a freight of social commentary. "Woo Hoo," as performed by the Rock-a-Teens, for instance, was an interesting experiment in directly expressed emotion, unfiltered by decipherable language. It consisted solely of the joyfully iterated phrase, "Woo hoo, woo hoo hoo," literally pitching woo. The phrase includes the somewhat mysterious cry of an owl ("hoo hoo"), evoking midnight in the forest, yet hinting at the traditional greeting of neighbors, "Yoo-hoo," thus opposing young love with nature's dark mysteries, and—the vector of those two forces—a kind of folksy chumminess, our shared humanity.

Many of the era's songs relied on such sonic symbolism. In "Sincerely," the Moonglows crooned "Please say you'll be mine"—but they prefaced it with "Bop ba-doh ba-doh ba-doh ba-doh oot-oot-ooo oo-be-yoo, oot-oot."

In such cases, textual interpretation can be a mistake, for surely the lyricist was addressing not the mind of the singer's teenage queen but her heart. Thus, he ransacked his id for raw sounds to express romantic longing. And indeed, what denotative murmurings could the adored one find more irresistible than "Bah-oom oot-oot-ooo oo-be-yoo?"

Some of the early lyricists were more obscure, as when the Crewcuts sang "Sh-Boom," which went like this: "Hey nonney ding dong a-lang a-lang a-lang. Boom ba-doh, ba-doo-ba-doo." Yet, that mysterious passage was followed with a clear, sweet statement of wished-for happiness: "Life could be a dream, *sh-boom*. . . . If you would tell me I'm the only one that you love." Was our lyricist contrasting the dissonance of the war years (the "boom ba-loom" of gunfire) with the innocent hopefulness of the Eisenhower era?

Sometimes lyrics were crystalline, as when the Temptations sang, "If Barbara would be mine and wear my high school ring, then I'd climb the highest mountain, do just anything." But Little Anthony and the Imperials' "Shimmy, Shimmy, Ko-Ko-Bop" was a marvel of ambiguity. "Sitting in a native hut, all alone and blue./Just sitting in a native hut, wondering what to do./Along came a native girl, did a native dance./It was like in paradise, put me in a trance./Goin' shimmy-shimmy, ko-ko-bop, shimmy-shimmy bop." Where *was* this "native" hut in which Little Anthony was sitting? What does "ko-ko-bop" mean?

Clearly we have dived into deep waters here. Generations of PhD candidates, turning over each word in those classic lyrics to see what lies underneath, will only begin to make clear to us what those minds were thinking of.

As for the sadly deteriorated rock lyrics of today, perhaps the kindest comment is Elvis Presley's: "You ain't nothin' but a houn' dog!"

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